CERTIFICATION REGARDING LOBBYING

Certification for Contracts, Grants, Loans, and Cooperative Agreements

The undersigned certifies, to the best of his or her knowledge and belief, that:

(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure of Lobbying Activities," in accordance with its instructions.

(3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

Statement for Loan Guarantees and Loan Insurance

The undersigned states, to the best of his or her knowledge and belief, that:

If any funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this commitment providing for the United States to insure or guarantee a loan, the undersigned shall complete and submit Standard Form-LLL, "Disclosure of Lobbying Activities," in accordance with its instructions. Submission of this statement is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required statement shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

* APPLICANT'S ORGANIZATION

Board of Regents, Univ. of NE dba Univ. of NE at Omaha

* PRINTED NAME AND TITLE OF AUTHORIZED REPRESENTATIVE

Prefix: * First Name: Tiffani   Middle Name:

* Last Name: Hix   Suffix:

* Title: Director of Sponsored Programs

* SIGNATURE: Amanda Buker   * DATE: 05/20/2021

Application for Federal Assistance SF-424

* 1. Type of Submission:	* 2. Type of Application:	* If Revision, select appropriate letter(s):
☐ Preapplication	☒ New	
☒ Application	☐ Continuation	* Other (Specify):
☐ Changed/Corrected Application	☐ Revision	

* 3. Date Received:	4. Applicant Identifier:
05/20/2021	

5a. Federal Entity Identifier:	5b. Federal Award Identifier:

State Use Only:

6. Date Received by State:	7. State Application Identifier: NE

8. APPLICANT INFORMATION:

* a. Legal Name: Board of Regents, Univ. of NE dba Univ. of NE at Omaha

* b. Employer/Taxpayer Identification Number (EIN/TIN):	* c. Organizational DUNS:
(b)(6)	1908271620000

d. Address:

* Street1:	(b)(6)
Street2:	
* City:	
County/Parish:	
* State:	(b)(6)
Province:	
* Country:	(b)(6)
* Zip / Postal Code:	(b)(6)

e. Organizational Unit:

Department Name:	Division Name:

f. Name and contact information of person to be contacted on matters involving this application:

Prefix:	* First Name:	Amanda
Middle Name:		
* Last Name:	Buker	
Suffix:		

Title: Grants Coordinator

Organizational Affiliation:

Office of Research and Creative Activity

* Telephone Number: (b)(6)	Fax Number:

* Email: (b)(6)

Application for Federal Assistance SF-424

* 9. Type of Applicant 1: Select Applicant Type:

H: Public/State Controlled Institution of Higher Education

Type of Applicant 2: Select Applicant Type:

Type of Applicant 3: Select Applicant Type:

* Other (specify):

* 10. Name of Federal Agency:

Department of Homeland Security - FEMA

11. Catalog of Federal Domestic Assistance Number:

97.132

CFDA Title:

Financial Assistance for Targeted Violence and Terrorism Prevention

* 12. Funding Opportunity Number:

DHS-21-TTP-132-00-01

* Title:

Fiscal Year (FY) 2021 Targeted Violence and Terrorism Prevention (TVTP)

13. Competition Identification Number:

Title:

14. Areas Affected by Project (Cities, Counties, States, etc.):

[Add Attachment] [Delete Attachment] [View Attachment]

* 15. Descriptive Title of Applicant's Project:

Innovation in Targeted Violence and Terrorism Prevention: Developing and Testing an Intelligent Chatbot to Help Individuals Identify Threats and Improve Tips Reporting

Attach supporting documents as specified in agency instructions.

[Add Attachments] [Delete Attachments] [View Attachments]

Application for Federal Assistance SF-424

16. Congressional Districts Of:

* a. Applicant `NE-002`   * b. Program/Project `NE-all`

Attach an additional list of Program/Project Congressional Districts if needed.

| | Add Attachment | Delete Attachment | View Attachment |

17. Proposed Project:

* a. Start Date: `10/01/2021`   * b. End Date: `09/30/2023`

18. Estimated Funding ($):

* a. Federal	715,102.00
* b. Applicant	0.00
* c. State	0.00
* d. Local	0.00
* e. Other	0.00
* f. Program Income	0.00
* g. TOTAL	715,102.00

* 19. Is Application Subject to Review By State Under Executive Order 12372 Process?

☐ a. This application was made available to the State under the Executive Order 12372 Process for review on `_____` .

☐ b. Program is subject to E.O. 12372 but has not been selected by the State for review.

☒ c. Program is not covered by E.O. 12372.

* 20. Is the Applicant Delinquent On Any Federal Debt? (If "Yes," provide explanation in attachment.)

☐ Yes   ☒ No

If "Yes", provide explanation and attach

| | Add Attachment | Delete Attachment | View Attachment |

21. *By signing this application, I certify (1) to the statements contained in the list of certifications** and (2) that the statements herein are true, complete and accurate to the best of my knowledge. I also provide the required assurances** and agree to comply with any resulting terms if I accept an award. I am aware that any false, fictitious, or fraudulent statements or claims may subject me to criminal, civil, or administrative penalties. (U.S. Code, Title 218, Section 1001)

☒ ** I AGREE

** The list of certifications and assurances, or an internet site where you may obtain this list, is contained in the announcement or agency specific instructions.

Authorized Representative:

Prefix:	
* First Name:	Tiffani
Middle Name:	
* Last Name:	Hix
Suffix:	

* Title: `Director of Sponsored Programs`

* Telephone Number: (b)(6)   Fax Number:

* Email: (b)(6)

* Signature of Authorized Representative: Amanda Buker   * Date Signed: 05/20/2021

Name of Entity Applying:
Tiffani Hix, Authorized Organization Representative
Director of Research and Creative Activity
University of Nebraska at Omaha
Office of Research and Creative Activity

(b)(6)

(b)(6)

Dr. Joel S. Elson (PI) and Dr. Erin M. Kearns (Co-PI)
National Counterterrorism Innovation, Technology, and Education Center (NCITE)
University of Nebraska at Omaha

(b)(6)

(b)(6)

Primary Location: Omaha and Sarpy County, Nebraska with regional and national components to improve generalizability and scalability

Track: Track 3 Innovation

Project type: Objectives 3 and 4

Amount of Funds Requested: $715,102

Project abstract:
Effective terrorism and targeted violence (TTV) prevention and intervention relies upon members of the public to report concerning behavior they observe. Yet, research has typically focused on hypothetical willingness to report crime to police. Thus, we know little about how this process functions, and more importantly why it fails. Three critical questions need to be addressed, specifically: 1) how do members of the public identify what behaviors are concerning, 2) what factors impact their willingness to report those behaviors to non-law enforcement entities, and 3) how can familiarity with tips reporting options be increased. We propose a multi-pronged approach to improve TTV tips reporting. We will combine real-world online tips reporting data in Sarpy County, Nebraska, focus groups with threat assessment team members locally, regionally, and nationally, and lab-based studies to understand gaps in the current TTV tips reporting framework. The **proposed innovation project will then create and experimentally test an intelligent chatbot for TTV tips reporting** that can be used either as a stand-alone tool or be integrated into existing tips reporting platforms. Chatbots have distinct advantages compared to traditional methods of gathering data. For example, people are more engaged and connected with a chatbot, which can improve the amount or types of disclosures. Results will inform local and national stakeholders including DHS's Center for Prevention Programs and Partnerships (CP3), the Nebraska Governor's Office, and the Sarpy County Sheriff's Office.

PROJECT NARRATIVE

1. NEEDS ASSESSMENT

Target Population for Services

     The **proposed innovation project will create and validate an intelligent chatbot for terrorism and targeted violence tips reporting** that can be used either as a stand-alone tool or be integrated into existing tips reporting platforms. Most immediately, the chatbot created from the proposed project would serve the greater Sarpy County, Nebraska population and the four University of Nebraska campuses located across the state (Omaha, Lincoln, Kearney, and the Medical Center). Sarpy County, Nebraska is located in the Omaha metropolitan area and has a population of over 187,000. The project will also serve the four University of Nebraska (UNO) campuses: University of Nebraska at Lincoln (25,108 students), University of Nebraska at Omaha (15,892 students), University of Nebraska at Kearney (7,173 students), and University of Nebraska Medical Center (4,247 students). Importantly, we will develop the chatbot with the specific aim toward scalability and generalizability where possible. While the main thrust of project development is focused in Nebraska, we will also collect national data to ensure that the underlying issues with reporting and mechanisms to address those issues with the chatbot apply nationally. Thus, the resulting chatbot product will be validated with both local and national samples, and will be licensed for use in communities across the country.

Inventory of Programs that Currently Serve the Target Population

     Nationally, communities rely on traditional reporting frameworks such as telephone hotlines and website tips reporting platforms. The state of tips reporting is no different for Sarpy County, Nebraska and the University of Nebraska (UN) campuses. Sarpy County primarily relies on phone calls to 911 emergency services and non-emergency phone lines. Beyond this, Sarpy County also uses a reporting platform called Awareity that allows citizens to report tips online. In Sarpy County, the Awareity platform is located on various government websites including the sheriff's office website and K12 school websites. Additionally, Sarpy County has partnerships with local non-profit and non-governmental programs such as Omaha Crime Stoppers. The four UN campuses rely primarily on an online tips reporting platform called Maxient, which is located on each campus' website. The UN campuses also use dedicated reporting telephone hotlines.

     In conversations with Sarpy County threat assessment team members, we have learned that there is a lack of community member trust in the current reporting systems. And, this lack of public trust in reporting systems is a broader concern across the country, which hinders terrorism and targeted violence prevention (Kearns, 2016). In a recent national survey of US adults, over 30% of people who said that they have been in a situation where they thought they should call the police have <u>not</u> actually done so (Kearns, 2021). Less than half of the sample (43.4%) indicate that they have <u>ever</u> called the police to report a crime or potential crime (Kearns, 2021).

     The chatbot-based reporting platform proposed in this effort includes critical functionality beyond the basic ability to receive tips like the programs and platforms outlined previously. Unlike traditional systems, the chatbot-based platform we are proposing offers a tailored interaction for each potential report. Specifically, this allows people to make casual threat inquiries (i.e. "is this thing I saw actually worth reporting") and to educate people on threats and the reporting process. Unlike traditional systems like telephone hotlines or static web-based forms, this chatbot platform will leverage artificial intelligence and machine learning to meet citizen reporters where they are at, allowing individuals to talk about information in the way they are familiar with. Unlike traditional systems, the chatbot-based reporting platform we will develop and validate can be

deployed within web-based social media platforms individuals already use and are familiar with, potentially increasing both access and trust. Finally, the chatbot platform can be tailored to either a) collect information as a stand-alone system that threat assessment teams can access directly or b) point individuals to their community's existing reporting platform (i.e. Awareity, Maxient, or a proprietary system) if and when the chatbot and user decide that is the preferred course of action.

2. PROGRAM DESIGN AND IMPLEMENTATION
Problem Statement

Effective terrorism and targeted violence (TTV) prevention and intervention relies upon members of the public to report concerning behavior (Clarke & Newman, 2006; Maguire & Wells, 2009; McGarrell et al., 2007). Breakdowns in the reporting process occur when individuals fail to report concerns observed. Examples of such breakdowns occurring are both recent and tragic. Prior to the June 2016 Pulse Nightclub attack in Florida, Omar Mateen's wife failed to report concerns she had about her husband to authorities. After the mass shooting, she told the FBI that she accompanied her husband to buy ammunition, had previously driven him to the Pulse Nightclub, and attempted to convince him not to carry out the attack (Apuzzo & Lichtblau, 2016). This failure to report concerning behavior had the tragic outcome of 49 people killed and an additional 53 people wounded. Unfortunately, preventative reporting and information sharing is not isolated to this one incident and is a major current challenge facing national homeland security efforts.

There are **multiple points during the process of identifying and sharing information relating to potential TTV threats where breakdowns can occur, hindering intervention efforts resulting in deadly consequences**. The three critical points in the tips reporting process include: 1) identifying a behavior as concerning; 2) willingness to provide a tip about concerning behavior; and, 3) knowing how and where to report the concerning behavior. Most research in this area has focused only on public willingness to report concerns to law enforcement (Decker, 1981; Sunshine & Tyler, 2003; Tyler, 2001, 2004; Tyler & Fagan, 2008). Thus, we know little about how this process functions, and more importantly why it fails.[1]
Challenges with Identifying Behavior as Concerning

While the *See Something Say Something* campaign is estimated to have prevented 10-14% of public transportation systems attacks since its implementation (Jenkins & Butterworth, 2018), people may not recognize potentially suspicious behaviors that lead to TTV. Indeed, while numerous pre-incident activities related to TTV have been identified (Gruenewald et al., 2015 funded by DHS: 2011-MU-BX-K006), people often do not recognize that these behaviors are concerning which can influence reporting decisions (Kearns, 2016). For example, people are more likely to identify a person who is talking about planting explosives in public as a concerning behavior as opposed to someone who is reading or distributing recruitment materials from a terrorist group (LaFree & Adamczyk, 2017). Further, racial and ethnic bias of potential reporters can influence which behaviors they identify as concerning. While TTV is mostly perpetrated by white Americans, public biases associating terrorism with Islam can explain why people are more likely to identify a behavior as concerning when committed by a person who is Muslim or Middle Eastern (Carson & Politte, 2020). Importantly, the primary weakness of literature focused on identifying behaviors as concerning or suspicious is the over-reliance on hypothetical scenarios rather than actual behaviors observed. The study we are proposing uses real-world data to

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[1] An ongoing NIJ-funded program (2018-ZA-CX-0004) is conducting semi-structured interviews with a sample of 144 community members and professionals in California and Illinois to examine barriers to reporting. The proposed project complements this work with data from national samples, experimental methods, and real-world reporting data.

understand—and mitigate—barriers to identification and reporting of concerning behavior, which is sorely needed in the field.

Challenges with Willingness to Report

Criminological studies find willingness to report behavior identified as concerning is influenced by levels of trust in authorities, fear of reprisal, and seriousness of that behavior. People who have greater trust in law enforcement are more willing to make a report to police (Decker, 1981; Sunshine & Tyler, 2003; Tyler, 2001, 2004; Tyler & Fagan, 2008). Yet, when community-police tensions are high, a lack of trust in authorities can hinder an individual's willingness to call local law enforcement. Further, concerns about whether a behavior meets a threshold sufficient of reporting can decrease willingness to call the FBI.[2] In general, people also indicate greater willingness to report serious crimes than other behaviors (Buckley et al., 2016; McCarthy et al., 2015; Skogan, 1976, 1984; Tarling & Morris, 2010). Criminological literature has largely not addressed public willingness to report concerning behaviors to non-law enforcement entities. Criminological research suggests a lack of willingness to report concerning behavior can be offset when people can do so anonymously (Kearns, 2016), and when fear of reprisal is lower (Shih et al., 2019; Slocum, 2017).[3] Moreover, when a tips system is not based in a law enforcement entity, it may offset a lack of trust in authorities.

Challenges with Knowing How to Report

Finally, when a person identifies a behavior as suspicious and decides they are willing to report it, that person must know how and where to report the information. Despite widespread efforts to increase public awareness of reporting systems, less than half of U.S. adults reported a basic familiarity with the *See Something, Say Something* campaign in 2012 (LaFree & Adamczyk, 2017). By early 2020, roughly 60% of U.S. adults were familiar with this campaign, yet most people did not know where or how to report suspicious activity (Kearns, 2021). Additional research looking at the reasons behind deficiencies in knowledge around how and where to report concerning behavior is needed in order to inform policy, framing, and educational strategies around reporting.

Address these Concerns with an Innovative Chatbot

Conversational agents are user interfaces that emulate human-to-human communication using natural language processing, machine learning, and artificial intelligence. Chatbots are one instantiation of a conversational agent. At the most basic level a chatbot is a computer program that simulates and processes human conversation (either written or spoken), allowing humans to interact with digital devices as if they were communicating with a real person. Conversational chatbots are widely used on a number of popular websites. For example, customer support on most e-commerce websites involve intelligent chatbots.

Improving Ability to Identify Concerning Behaviors. Individuals who have an inclination that something should be reported but lack confidence or ability to articulate their concern may be hesitant to reach out to a human authority (e.g. a reporting hotline) or complete an online reporting form. Conversational agents, such as chatbots, offer an informal and approachable alternative for people wanting to inquire, explore, and learn about TTV topics before making a

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[2] A previously funded DHS Science and Technology Directorate project (HSHQDC-16-C B0028) aimed to test text-based reporting systems and understanding of terrorism-related prevention needs.

[3] An ongoing NIJ-funded project is evaluating the effectiveness of an anonymous reporting system in the Miami Dade County, Florida school district (NIJ: 2017-CK-BX-0002) to further evaluate this process. Similarly,
land, California implemented an anonymous tip line that has aided local police in combating gang activity and drug activity (DOJ COPS Office, 2015).

formal report. Chatbots have unique advantages over traditional learning and topic exploration pathways. When people are forced to look up information on their own, they can get discouraged or be unable to generate the specific search terms needed to initiate their learning inquiry (Hembrooke et al., 2005). In contrast, chatbots can intelligently guide people down learning paths to help them discover the valuable information they possess but may have dismissed as irrelevant. Unlike interactions with formal human authorities, chatbots serve as a neutral middle ground which often are less anxiety-inducing than talking with a human, but also more helpful and personable than a search box (Ho et al. 2018).

Increasing Willingness to Report. We do not specifically know how online, non-law enforcement-based tips systems influence willingness to report concerning information. Yet, an analogous body of literature on behavior in the fields of computer science, information systems, and information technology innovation is informative on this matter. From a technology perspective, trust barriers, anonymity barriers, and user-interface barriers are critical considerations for overall system utilization (Allnock & Atkinson, 2019; Parasuraman et al., 2007). People may be influenced by trust in system anonymity, confidence in a platform's ability to process tips, and confidence that any information shared will be valued and acted upon. The visual design and usability of a system also plays a critical role in both establishing trust and reducing mental workload required to complete a report (Atoyan et al., 2006). Systems that are not intuitive and immediately understandable may quickly overwhelm users and deter reporting behavior.

Chatbots, such as the one we propose to create, may mitigate reporting concerns by encouraging people to report issues, no matter how small they might seem. Chatbots have distinct advantages compared to traditional methods of gathering data such as online forms, hotlines, or interviews. Compared to traditional web forms which may be abandoned midway or be incomplete, chatbots have a social component because of their natural language interface that encourages continued interaction (Kim et al., 2019). People are more engaged and connected with a chatbot, which can improve the amount and types of disclosure (Te Pas et al., 2020). In conversations among humans, people may feel pressure to represent themselves in a particular way or pursue socially desirable lines of reasoning. A distinct advantage of chatbots over human interviewers is their ability to avoid responses adjusted to conform to perceived social desirability (Schuetzler et al. 2018). Further, when people interact with perceived experts who are human, they may experience anxiety about either appearing unknowledgeable or not wanting to engage as they have uncertainty around their information (Maeda, et al. 2020).

Since information sharing and reporting of suspicious activity are not everyday occurrences, most people can be considered novices in two distinct but interconnected ways: 1) the topic area and 2) the information system or reporting process. People generally have limited experience with the institutions, systems, and even language around terrorism and threat prevention. Similarly, users of tips reporting systems are often operating at novice levels of skill and familiarity. Even with prior experience with a system, familiarity, confidence, and ability to use a software interface degrade quickly with even a short passage of time. At this point of low system familiarity, the risk and uncertainty related to the use of the novel tips platform means that individuals are particularly sensitive to system design which can contribute to low trust in the reporting platform and deter reporting (Elson et al., 2018). Chatbots help to address the lack of expertise and conditions ripe for low trust by offering an intuitive and familiar interface. To better understand public willingness to provide tips, research on barriers and facilitators of reporting

concerning behavior is critical. Innovative platforms to report TTV tips, such as a chatbot we propose to develop and test, will advance actionable knowledge on reporting behaviors.

   Improving Knowledge about How to Report. Chatbots offer capabilities to provide knowledge scaffolding, which allows individuals who may be unfamiliar with terrorism and targeted violence reporting to use vocabulary they are comfortable with to drive the information sharing interaction with a tips system (Palasundram et al., 2019) Chatbots are also deployable as stand-alone websites accessed from web links on reporting pages. Possibly more promising is the ability to deploy chatbots inside of technology platforms such as social media already used by the general public. By engaging people where they are, chatbots reduce an individual's barriers for inquiring and reporting information. For example, a user of a social media platform may have trust in the platform they choose to use but not in a law enforcement website. A chatbot on the platform may provide greater familiarity allowing an individual to feel more comfortable engaging and reporting information.
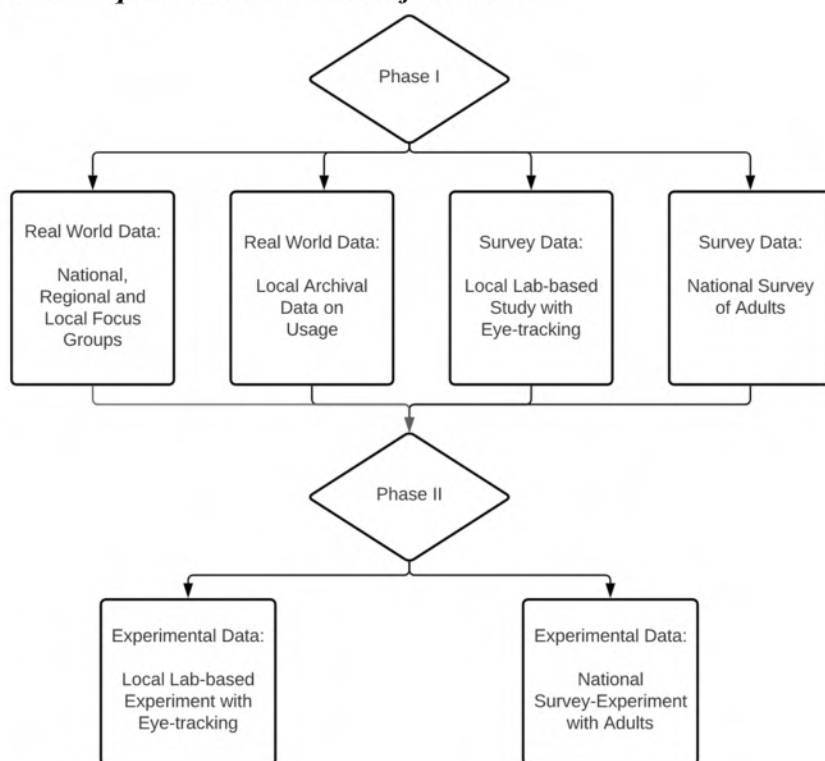
Program Goals and Objectives

   Our overarching goal is to **improve the tips reporting process to minimize breakdowns in actions required to intervene and prevent TTV**. The **proposed innovation project will create and test a chatbot for TTV tips reporting** that can be used either as a stand-alone tool or be integrated into existing tips reporting platforms, which supports Goal 3 (Prevent terrorism and targeted violence) of the Department of Homeland Security's Strategic Framework for Countering Terrorism and Targeted Violence.

   The proposed innovation project directly addresses Objectives 3 and 4 in the NOFO. Specifically, under Objective 3, we propose to develop a chatbot for TTV reporting that will "increase access to threat assessment and management services" and ensure that "more communities have programming to enhance resilience to targeted violence and terrorism narratives." Under Objective 4, the proposed chatbot will be a "more effective mechanisms for local citizens to refer and connect individuals with risk factors to online or offline intervention capability." Second-order effects from the proposed chatbot will also "increase societal awareness of targeted violence, terrorism and the process of radicalization to violence" (Objective 1) and increase access to multi-disciplinary threat assessment teams by "referring and connecting individuals with risk factors to online or offline intervention capability" (Objective 6).

   To achieve these objectives, we aim to better understand reporting processes and barriers and to increase reporting high-quality information through a chatbot tips reporting interface. In **Phase I**, our aim is to better understand real-world tips reporting processes and barriers to reporting using mixed-methods design that combines real-world and lab-based data. Specifically, we will conduct **A)** archival analyses using real-world data on tips reported through an existing online platform and **B)** focus groups with threat assessment team members locally, regionally, and nationally to better understand real-world tips reporting processes and gaps. To better understand barriers to tips reporting, we will also conduct **C)** a lab-study using eye tracking to elucidate cognition involved in reporting with a local sample and **D)** a national survey of the public. In **Phase II**, we will use insights from Phase I to **create a chatbot** aimed to improve and increase tips reporting. We will validate the chatbot's efficacy with **E)** a lab-based experiment using eye tracking with a local sample and **F)** a national survey experiment of the public. Most **importantly,** the proposed innovation project will create a chatbot for TTV tips reporting that can be used **either as a stand-alone tool** or **be integrated into existing tips reporting platform**. Figure 1 outlines the proposed innovation project's process.

Figure 1. *Proposed Innovation Project Process*

Data access, committed partners, and the assembled research team's expertise come together to provide a *unique and feasible* opportunity to create and test a chatbot for TTV reporting that can be rolled out in communities around the country. Prior to data collection, all study materials will be submitted to the Institutional Review Board (IRB) at the University of Nebraska. After approval, materials will undergo a full Human Subject Research (HSR) review by DHS to ensure adherence to DHS Compliance and Assurance Program Office (CAPO) and Privacy Office procedures.

Phase I: Real-World Tips Reporting Data

We have the unique opportunity to examine real-world TTV tips data provided to an existing online platform in Sarpy County, Nebraska and to speak with the threat assessment team member located in Sarpy County, NE, across Nebraska, and nationally to identify the strengths and weaknesses they perceive in current tips reporting.

For the **archival analysis**, we are interested in what information is currently being reported in Sarpy County to an online tips platform called Awareity, which strives to connect people on community-wide threat assessment teams with information and data reported so that preventative actions can be taken. Critically, the platform is designed to make information available to all first responders, not just law enforcement. The Awareity tips reporting platform will provide the research team with de-identified data about tips reported in the platform. In accordance with FERPA, HIPAA, and other regulations, Awareity will not provide details about tips that could possibly include identifying or sensitive information. We will conduct quantitative analyses to identify what kinds of information is currently reported.

For the **focus groups**, we are interested in what threat assessment team members think are the aspects of a tip reporting platform best support prevention efforts and what information deficits exist. We will convene three focus groups: one of threat assessment team members locally in Sarpy County, NE, one with threat assessment team members across the state of Nebraska, and one of threat assessment team members nationally who also use the Awareity tips reporting platform. The local focus group will take place on UNO's campus while the regional and national focus groups will occur on Zoom. We will collect qualitative information in the focus groups and conduct thematic analyses to identify themes using Atlas.ti and NVivo.

Phase I: Survey Data

From the real-world reporting data it is, of course, impossible to know what kinds of information were not reported. To address this, we are interested in factors that influence how people identify behaviors as concerning for TTV, their willingness to report such behavior, and their ability to do so.

The **lab-based survey** will include eye-tracking to understand actual behavior and cognitive processes involved when engaging with a real-world reporting system and a prototype chatbot. Researchers have recommended use of neurophysiological approaches (i.e., eye behaviors) to measure Information Systems constructs directly (Dimoka et al., 2012). The **strength of this methodology is its ability to capture the subconscious, neurophysiological representation of the latent constructs, which is a significant supplement to self-report data that may be biased by the respondents' conscious and subjective cognitive processing** (Dimoka et al., 2012; Mandryk et al., 2006). With visual attention for example, participants are often unable to accurately recall what they saw, let alone for how long and in what order. Eye-tracking addresses this. Figure 2 shows a sample heat map of visual attention across participants viewing an online platform of information, which is similar to what will be used in this stage of the project. Heat maps are an intuitive data visualization technique for eye-tracking, showing regions of greatest attention as red, and areas with less attention light green and yellow. Numerical labels identify the order of the screen regions viewed and information processed.

Figure 2. *Sample Eye-Tracking Heat Map*

We will contract with the UNO CAB Lab on campus to provide a local sample of 100, which is considered a large sample size in the usability literature from which this approach is derived (Nielsen & Landauer, 1993), from their research participant pool initiative. The CAB Lab will manage data collection with their eye-tracking equipment (Tobii X2-60) to monitor participants' interactions with the reporting platform. In this lab study, we will present participants with scenarios of concerning behaviors (i.e., reportable warning signs) whose development will be informed by real-world events of terrorism or targeted violence. After participants read each scenario, we will present them with an online tips reporting system and ask them to report the concerning behavior. As participants use the reporting platform, we will capture eye movements to identify what people view first, most often, and longest. We will also measure pupil dilation as a proxy for cognitive load at various points in the reporting process. Additionally, participants will answer the same questions asked in the national survey described below. At this phase we will also test an early prototype of a chat-based system, basing this system on existing reporting forms from the systems utilized by our local partners.

For the **national survey**, we will contract with an online survey research company, Qualtrics[4], to provide a sample of 1,300 U.S. adults that is approximately representative of the population. Quotas will be set for key demographics—race, gender, age, education, income, and region—guided by U.S. Census data. **With this sampling frame and appropriate weighting techniques, we can estimate population parameters**, as is commonly done in public opinion polling like Gallup and Pew. In this survey, we will measure knowledge on the types of behaviors that should be reported, levels of trust and concerns associated with various reporting avenues, as well as the issues, challenges, and barriers to reporting in their communities and knowledge on how to do so. We will also provide participants with scenarios to evaluate and report in a mock reporting platform. The benefit of a national survey is that results are generalizable (Coppock, Leeper & Mullinix, 2018)—which is important for the sustainability and broader impact of the chatbot we will develop.

We will collect quantitative and qualitative information in both surveys, and eye-tracking data in the lab-based study. Quantitative analyses will include descriptive statistics and inferential analyses with appropriate multivariate estimators in programs including SPSS, Stata, and MPlus. Qualitative analyses will include a thematic analysis on the open-ended survey response to identify emergent themes and their representativeness within the data in Atlas.ti and NVivo. Eye-tacking data, including gaze path, time-to-first fixation, dwell times, and fixation counts, will be analyzed quantitatively using iMotions, SPSS, and R software.

Phase II: Experimental Data

Taking insights from Phase I, our aim here is to continue development work and test a refined chatbot for TTV reporting. For the **lab-based experiment** we will again contract with the UNO CAB Lab to provide a local sample of 200 participants, which is larger due to the experimental design, and to manage data collection with eye-tracking equipment (Tobii X2-60). For the **national experiment**, we will again contract with Qualtrics to provide another sample of 1,300 U.S. adults that is approximately representative of the population to ensure that the mechanisms hold for a broader roll-out of the chatbot. People who participate in the Phase I surveys will be excluded from participation in the Phase II experiments.

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[4] It is common practice for academics to hire an external panel provider for survey and experimental research (e.g., McLean, 2017; Wozniak, Drakulich & Calfano, 2020).

Based on barriers to reporting identified in Phase I, we will create a chatbot for TTV tips reporting and examine how people interact with and report scenarios in this application as compared to a static online reporting platform. In both experiments, participants will be randomly assigned to either the chatbot condition or the static reporting platform condition. We will systematically examine how the platform influences willingness to report and ability to report high-quality information. In the lab-study, we will also collect eye-tracking behavior to better understand participant cognition and engagement with the chatbot versus a static platform.

In Phase II, our main analyses will be comparison of outcomes like willingness to report, ability to report, and report quality between the experimental treatment groups. Quantitative analyses will include descriptive statistics, comparisons between groups (t-test, ANOVA), and appropriate multivariate estimators. We will collect qualitative data on the system design, and analyze responses in Atlas.ti and NVivo. Again, eye-tracking data will be analyzed quantitatively using iMotions and statistical software packages. **The final deliverable from these studies will be a chatbot for TTV reporting** that can exist as either a stand-alone tool or be integrated into existing tips reporting platforms.
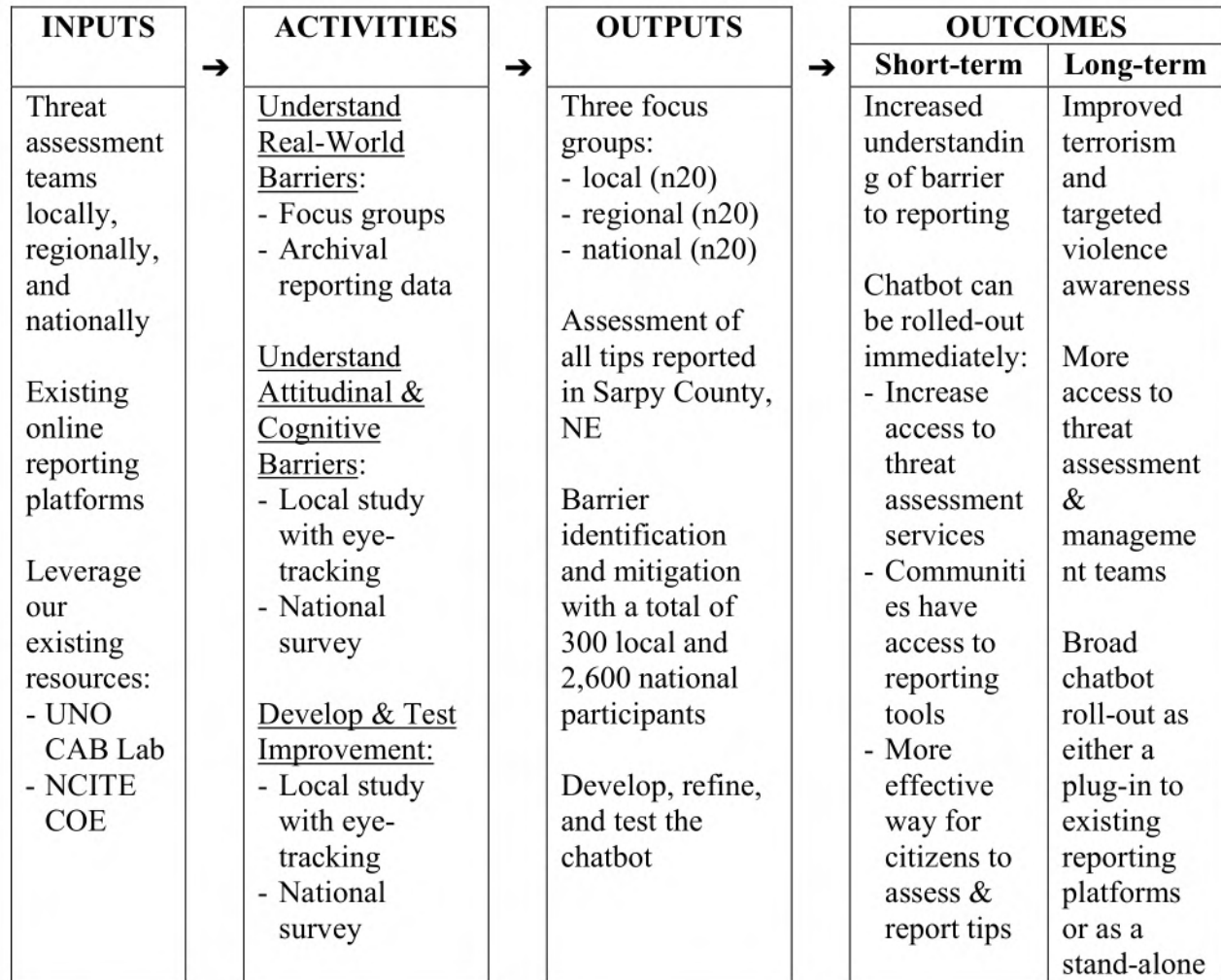
Logic Model/Theory of Change

The **theory of change** underlying the logic model in Figure 3 expects that if we can better understand the barriers to reporting terrorism and targeted violence—including knowing what to report, being willing to report it, and knowing how to report—we can then develop, test, and implement a chatbot to mitigate those barriers, improve the reporting process, and ultimately prevent terrorism and targeted violence incidents.

The **contextual factors and underlying assumptions** relevant to this project are that there are many ways that people can report tips about potential TTV threats, yet research shows that people are often unsure about what to report and are hesitant to report to law enforcement. Taking this into consideration, the proposed innovation project accounts for these elements by first aiming to better understand reporting barriers before developing a chatbot to improve reporting. Further, the proposed chatbot will be licensed for immediate roll-out around the country and can be either used as a stand-alone product or integrated within a larger reporting platform.

Chatbots have been proven to be effective for clarifying problems and eliciting information from the user in other milieu. The research team has expertise in chatbot development and also in information technology user interfaces more broadly. Further, the research team has expertise understanding the human side of barriers to reporting due to uncertainty on what to report, unwillingness to report, and lack of knowledge on how to do so. Blending our expertise and the supporting bodies of empirical research, the proposed chatbot has a high **likelihood of success**.

Figure 3. *Logic Model for Chatbot Creation*

INPUTS		ACTIVITIES		OUTPUTS		OUTCOMES	
	→		→		→	**Short-term**	**Long-term**
Threat assessment teams locally, regionally, and nationally Existing online reporting platforms Leverage our existing resources: - UNO CAB Lab - NCITE COE		Understand Real-World Barriers: - Focus groups - Archival reporting data Understand Attitudinal & Cognitive Barriers: - Local study with eye-tracking - National survey Develop & Test Improvement: - Local study with eye-tracking - National survey		Three focus groups: - local (n20) - regional (n20) - national (n20) Assessment of all tips reported in Sarpy County, NE Barrier identification and mitigation with a total of 300 local and 2,600 national participants Develop, refine, and test the chatbot		Increased understanding of barrier to reporting Chatbot can be rolled-out immediately: - Increase access to threat assessment services - Communities have access to reporting tools - More effective way for citizens to assess & report tips	Improved terrorism and targeted violence awareness More access to threat assessment & management teams Broad chatbot roll-out as either a plug-in to existing reporting platforms or as a stand-alone

3. ORGANIZATION AND KEY PERSONNEL

The **organizational capability** for this project will be supported under the infrastructure of the **National Counterterrorism, Innovation, Technology and Education (NCITE) Center of Excellence**. The NCITE Center is the DHS designated federal partner for terrorism prevention and counterterrorism research. After winning this 10-year designation in 2020, UNO invested further in its capabilities to operate large federal grants for TTV prevention to support the significant experience and capability of this team in producing and delivering meaningful results. This Security and Intelligence Core Hub has resulted in the development of several public-private partnerships that focus on the prevention of targeted violence and terrorism. The project team has access to professional project management, communications, compliance, and executive event support to host in-person and virtual meetings with stakeholders and sponsors. Given the DHS cooperative agreement, leadership of the NCITE Center is engaged in ongoing concerted work with relevant federal and field offices of the newly established Center for Prevention Programs and Partnerships (CP3). In addition, the Senior Advisor of the Social and Behavioral Science Unit at DHS S&T, is a Board member for NCITE and has regular engagements with key personnel. These programs will have a synergistic effect on the proposed project if awarded.

UNO's Office of Research and Creative Activity (ORCA) provides technical assistance for the preparation and management of research proposals and programs. ORCA processes awards on behalf of the faculty member and provides post-award, non-financial assistance. The Grants Accounting Office handles post-award financials, reporting, invoicing, and external audits. These offices have engaged with several federally funded grant projects with DHS.

UNO's School of Criminology and Criminal Justice (SCCJ) is a nationally ranked doctoral granting program that is well supported by the university. Significant intellectual support exists among the SCCJ faculty who have well-established records of conducting federally funded research with multiple federal and state agency partners including DHS. The SCCJ leadership and faculty are available for advisement as needed.

UNO's Peter Kiewit Institute (PKI) is shaped by the dynamic alliance of education and industry. The institute is a collaborative venture comprised of UNO's College of Information Science and Technology (IS&T) and the University of Nebraska-Lincoln's College of Engineering (CoE). Historically this arrangement has been a tremendous resource for government and industry partners, as the institute provides expertise across the technological spectrum, from human-computer interaction to data collection and analyses to system architecture.

UNO's Center for Collaboration Science (CCS) is an interdisciplinary university research center that resides outside the traditional academic hierarchy. Instead of belonging to a single college, CCS resides outside college boundaries and reports directly to the Vice Chancellor for Research. CCS will serve as the institutional research home for this project to complement the academic homes of the key investigators. By anchoring this project in an interdisciplinary institute-level construct, we make transition and mission focus central to the work proposed.

UNO's Koraleski Commerce and Applied Behavior Lab (CAB Lab) is a state-of-the-art research facility supporting cutting-edge human behavior research and is equipped with the tools to capture and analyze rich neurophysiological data. The CAB Lab has a track record of supporting research at the state and federal levels and in partnership with Fortune 500 companies. Previous research engagements have included over $1.6M with partners such as the Department of Defense, DHS, Gallup, Union Pacific, and many more. The CAB Lab recruits and maintains a participant pool of nearly 500 individuals from the College of Business Administration. The lab uses data collection technology for either in-person or remote data collection efforts.

Strategic Partnerships

State of Nebraska Homeland Security Advisor. As indicated in our letter of support (see appendix) from Lt. Governor Foley, who also serves as Nebraska's Homeland Security Advisor, if awarded, our team has the full support of the prevention community in Nebraska for this effort. We will have access to rural and metropolitan areas and stakeholders that other proposers will not have. We will recruit these individuals for the regional focus group.

Awareity is a platform of tools to achieve community-wide terrorism and violent acts prevention used by communities, schools, organizations and law enforcement groups in over 13 states coast to coast. Awareity has committed to providing de-identified reporting data from Sarpy County, Nebraska and will provide access to threat assessment team members who use their platform for the national focus group (letter of commitment in appendix).

The Sarpy County Sheriff's Office implemented the Awareity prevention platform, connecting four school districts (dozens of schools within each), two higher education institutions, the County Sheriff's office, other local law enforcement offices, the Juvenile Justice Center, the County Attorney's Office, and many community resources under one platform. Sarpy County will

allow the research team to de-identified reporting data and their threat assessment team members will participate in the local focus group (letter of commitment in appendix).

Key Personnel

The research team is comprised of experienced researchers with diverse backgrounds and skillsets who, together, are uniquely qualified to complete the proposed project.

Dr. Joel Elson, NCITE Executive Committee Member & Assistant Professor of IT Innovation (Co-Principal Investigator), specializes in the use of psychometric assessments, eye-tracking and neurophysiological measures applied toward research in human-computer interaction. Dr. Elson is a user-interface/user-experience expert whose primary research focuses on human-computer interaction and, more specifically, the impact of individual differences, system characteristics, and situational factors on human user's trust, feelings, and behavior toward those systems. He has served as PI on funded research that examines human interaction, trust, influence and decision-making with information systems for both government and industry partners, including the Department of Homeland Security and Union Pacific.

Dr. Erin Kearns, NCITE Executive Committee Member & Assistant Professor of Criminology and Criminal Justice (Co-Principal Investigator), has led over a dozen survey and experimental studies focused on public understanding of terrorism and counterterrorism efforts. She has conducted multiple studies focused specifically on public willingness to report suspicious activity related to TTV. Her primary research seeks to understand the relationship among terrorism, media, law enforcement, and the public. Her work has been funded through sources including the National Consortium for the Study of and Responses to Terrorism (START) and featured on numerous media outlets including *The Economist*, *NPR*, and the *Washington Post*.

Dr. Doug Derrick, NCITE Director of Innovation Transition, Director of the Center for Collaboration Science & Associate Professor of IT Innovation (Investigator) focuses on human-agent interactions, intelligent agents, collaboration technologies, decision support systems, persuasive technology and computer-mediated influence. He has extensive experience working with federal agencies, including the Department of Defense and the Department of Homeland Security. Dr. Derrick has decades of experience as an Air Force engineer and acquisition officer and as a government contractor. As a member of this project team, Dr. Derrick will provide expertise in technology transition and ensure long-term sustainability.

Dr. Ryan Schuetzler, Assistant Professor at Brigham Young University Marriott School of Business (Consultant) specializes in human interactions with automated interviewing systems and conversational agents. He has extensive experience developing and deploying chatbots in real world systems including healthcare and business applications. As a member of this project team, Dr. Schuetzler will provide expertise in natural language processing, conversational logic design, and chatbot technology development.

Dr. Gaylene Armstrong, Professor and Director in the School of Criminology and Criminal Justice (Senior Personnel), is also the current co-Director of the Nebraska Collaborative for Violence Intervention and Prevention. She has over 20 years of experience in research supporting federal and state level partners. She frequently collaborates with criminal justice organizations to guide policy and practice resulting in improved outcomes, high impact scholarship, and broad dissemination of data-driven scientific knowledge. Armstrong has served as PI or Co-PI on projects totaling over $36 million dollars in external funding from federal, state, and local entities including NIJ and DHS. Armstrong will use her prior experience to help optimize research design, data analysis, and facilitate collaborations with community partners.

Graduate Student Research Assistants: UNO's School of Criminology and Criminal Justice (SCCJ) is ranked among the top five nationally by *U.S. News & World Report*. The SCCJ graduate student will assist with archival research, study design, data management, analysis, and final report writing. UNO's College of Information Science and Technology (IS&T) is ranked first among public universities and second overall by the *Military Times*. The IS&T graduate student will assist with chatbot development, data management, analysis, and report writing.

Research Experience

The research team assembled for this proposed effort has requisite experience with the data sources in the context of similar research efforts. **Dr. Joel Elson** has experience developing and researching chatbot intelligent systems as well as conducting eye-tracking and neurophysiological experiments. He has a track record of working with Fortune 500 companies to develop innovative technology solutions, including intelligent decision support systems analogous to the one being proposed here. **Dr. Erin Kearns** has experience conducting surveys, experiments, and focus groups with the public and with practitioners in the field. She has a track record of publishing in high-quality criminology academic outlets and disseminating her research to practitioner and public audiences. **Dr. Doug Derrick** has expertise in technology transition and ensure long-term sustainability, and will lead these efforts. **Dr. Ryan Schuetzler** is an expert in chatbot development and deployment in real-world systems and will consult on all aspect of chatbot creation, refinement, testing, and final analyses. **Dr. Gaylene Armstrong,** who is a nationally respected criminologist, will serve as the **project advisor,** The purpose of the project advisor is to provide insights, ideas, and guidance which can only come with distance from the day-to-day research activities undertaken by the Co-PIs, researchers and graduate students, comprising the core research group.

The research team has extensive experience managing projects of this scope and magnitude, both in terms of research capability and systems already in place for managing deliverables, federal funds, and disseminating results to interested audiences. UNO has extensive experience administering FAR-based contracts with a variety of Federal agencies, and specifically within the past 10 years, has experience with FEMA, DOD, DARPA, the Department of State, the Department of Energy; NASA, DHS, and the Corps of Engineers.

UNO's experience includes acting as both a prime recipient and a subrecipient of FAR-based contracts. In addition, in 2012 the U.S. Strategic Command (STRATCOM) sponsored the establishment of the University of Nebraska (NU)/National Strategic Research Institute (NSRI), a University Affiliated Research Center (UARC), through the award of an Indefinite Delivery Indefinite Quantity (IDIQ) contract. Under these IDIQ contracts, UNO has performed dozens of task orders while developing core competencies in research and development, test and evaluation, systems innovation, integration, and engineering in support of U.S. DOD warfighting capabilities.

The NCITE Center has a dedicated staff member focused on compliance processes of federal granting agencies who will ensure adherence to all Federal laws and regulations and maintain a financial system that complies with the following: 1) capability to identify, in its accounts, all Federal awards received and expended, and the Federal programs under which they were received; 2) internal controls to assure that it is managing Federal awards in compliance with applicable laws, regulations, and the provisions of contracts, grants, and agreements; 3) capability to prepare appropriate financial statements, including the Schedule of Expenditures of Federal Awards; and 4) has no outstanding audit findings under 2 CFR 200.501 (Subpart F – Audit Requirements).

4. SUSTAINABILITY

Following the period of performance, we will pursue two paths to make this project sustainable for the long term: 1) the NCITE funding vehicle to pursue future government partnerships and 2) UNeMED intellectual property and licensing for private partnerships.

Leverage the relationship with NCITE as a funding vehicle, we will pursue future government funding and partnerships on NCITE BOA. The project fits into NCITE's organizational mission to transition and maintain technology related to safeguarding the homeland.

Leveraging the university patent and licensing pathways to pursue private partnerships. Established in 1991, UNeMED is a 501(c)(3) not-for-profit that supports the transition of research by securing intellectual property rights and building partnerships with private and commercial entities who will advance these discoveries to the marketplace where they can have a meaningful impact. NCITE will leverage the resources available within UNeMED including access to the five full-time patenting and licensing professionals and additionally access to all of UNeMED's resources and marketing capability including over 5,000 industrial partners for technology transition. **We foresee three tiers of licensing services: 1)** Hosted support and analysis, **2)** Integration with existing system; **3)** Limited use license of source code.

5. BUDGET DETAIL AND NARRATIVE

Budget Category	Federal Request
Personnel	$245,186
Fringe Benefits	$59,865
Travel	$12,245
Supplies	$28,000
Contractual	$33,000
Other	$117,792
Total Direct Costs	$496,088
Indirect Costs	$219,014
TOTAL PROJECT COSTS	**$715,102**

PERSONNEL
- **Joel Elson, PhD, Principal Investigator**. Support of ~2.8 summer months effort for Years 1 & 2. Dr. Elson will be responsible for the archival data project, the lab-based survey and experiment with eye tracking and overseeing the chatbot development. Year 1: $34,247. Year 2: $34,932.
- **Erin Kearns, PhD, Co-Principal Investigator**: Support of ~2.72 summer months effort for Years 1 & 2. Dr. Kearns will be responsible for the focus groups and the national survey and experiment. Year 1: $24,670. Year 2: $25,163.
- **Douglas Derrick, PhD, Investigator**: Support of 1 summer month effort in Years 1 & 2. Dr. Derrick will provide expertise in technology transition and ensure long-term sustainability. Year 1: $13,835. Year 2: $14,112.
- **Gaylene Armstrong, PhD, Senior Personnel**: Support of 0.028 FTE in Years 1 & 2. Dr. Armstrong will support the project co-PIs on high-level project considerations as part of the advisory board. Year 1: $5,295. Year 2: $5,401.
- **Graduate Assistants (2)**: One GA will be a 12-month PhD-level in the School of Criminology and Criminal Justice. A second GA will be a 12-month Master's-level in the College of

Information Science and Technology. The Graduate Assistants will be responsible for literature reviews and will assist in designing studies, collecting and cleaning data, and analyzing results. **PhD** (Year 1: $24,480. Year 2: $24,970). **MA** (Year 1: $18,852. Year 2: $19,229).
*All salaries reflect an inflation factor of 2%.

FRINGE BENEFITS
Actual amounts will be assigned to the grant funds.
- **Full time faculty/staff @ 29.8%.** Year 1: $23,258. Year 2: $23,723.
- **Graduate Assistants @ 0.32%.** Year 1: $139. Year 2: $141.
- **Graduate Assistant health insurance @ $2,431 per year with 10% annual increases.** Year 1: $6,002. Year 2: $6,602.

TRAVEL
- Conference travel to present findings in Year 2 for the PI, the co-PI, and the two Graduate Assistants. The amount budgeted will cover registration, airfare, hotel, per diem, and ground transportation. Costs will be within GSA lodging and per diem rates. Year 2: $12,245.

SUPPLIES
- To support data collection & chatbot development, we request $18,000 for four workstations at $4,500 each and four analysis laptops at $2,500 each. To conserve funds, this equipment will be used for multiple purposes concurrently across all phases of the project including: chatbot development, chatbot deployment, lab study development, study data collection and analysis. Year 1: $28,000.

CONTRACTUAL
- **Ryan Schuetzler, PhD, Consultant**: 16.3 days in Year 1 and 16.7 days of consulting in Year 2 @ $1,000/day. Dr. Schuetzler will consult on the chatbot creation, testing, refinement, and final analyses. Year 1: $16,300. Year 2: $16,700.

OTHER
- **CAB Lab fee for service:** The CAB Lab houses the eye-tracking technology required for this part of our study. The CAB Lab estimates purchasing, maintaining, and data collection costs at $250/person. Year 1: 100 participants - $25,000. Year 2: 200 participants - $50,000.
- **Human Subject Research:** Subsistence for a one-day in-person focus group (lunch and refreshments) for 20 Sarpy County threat assessment team members at $40 per person. Year 1: $800.
- **Qualtrics Survey:** Qualtrics to provide two separate panels of 1,300 U.S. adults each that are approximately representative on key demographics—race, gender, age, education, income, and region— at $6.50 per completed survey. Year 1: $8,450. Year 2: $8,450.
- **Tuition:** 18 credit hours per GA per year, calculated at the AY 2021-22 rates ($356 per credit hour in IS&T and $341 per credit hour in SCCJ). Tuition is not expected to increase due to a pandemic tuition freeze. Year 1: $12,546. Year 2: $12,546.

INDIRECT COSTS
- Indirect costs are calculated at 46.5% of MTDC per UNO's federally-negotiated rate with US DHHS (dated 05/23/16). Year 1: $106,638. Year 2: $112,376.

APPENDIX A: IMPLEMENTATION AND MEASUREMENT PLAN (IMP)

Project Goal Statement: *Our overarching goal is to improve the tips reporting process to minimize breakdowns in actions required to intervene and prevent terrorism and targeted violence (TTV). The proposed innovation project will create and test a chatbot for TTV tips reporting that can be used either as a stand-alone tool or be integrated into existing tips reporting platforms, which supports Goal 3 (Prevent terrorism and targeted violence) of the Department of Homeland Security's Strategic Framework for Countering Terrorism and Targeted Violence.*
Target Population: • *Initial roll-out in Sarpy County, Nebraska for community members to use, which will help the threat assessment team collect and connect tips related to terrorism and targeted violence* • *The chatbot platform will be hosted at the University of Nebraska and either embedded in or directly linked from partner websites.*

GOAL 1:

Goal 1: *Better understand real-world tips reporting processes to identify strengths and weaknesses*
Objective 1.1: *Archival analyses using real-world data on tips reported through an existing online platform (Awareity) in Sarpy County, Nebraska*
Objective 1.2: *Conduct a focus group with 20 threat assessment team members in Sarpy County, Nebraska*
Objective 1.3: *Conduct a focus group with 20 threat assessment team members across Nebraska*
Objective 1.4: *Conduct a focus group with 20 threat assessment team members nationally*

Goal 1 IMPLEMENTATION PLAN

Objectives	Activity	Inputs/Resources	Time Frame	Anticipated Outputs
Objective 1.1:	*Activity 1.1.1 Analyze archival real-world reporting data*	*Reporting data from Awareity in Sarpy County, NE*	*Q1-Q3*	*Identify current strengths and gaps in reporting to inform chatbot creation in Goal 3*
Objective 1.2:	*Activity 1.2.1 Conduct focus group with local threat assessment team members*	*Focus group with 20 threat assessment team members in Sarpy County, NE*	*Q1-Q3*	*Identify current strengths and gaps in reporting to inform chatbot creation in Goal 3*
Objective 1.3:	*Activity 1.3.1 Conduct focus group with state-wide threat*	*Focus group with 20 threat assessment team members from*	*Q1-Q3*	*Identify current strengths and gaps in reporting to*

	assessment team members	across the state of Nebraska		inform chatbot creation in Goal 3
Objective 1.4:	*Activity 1.4.1 Conduct focus group with national threat assessment team members*	*Focus group with 20 threat assessment team members who use the Awareity reporting platform nationally*	*Q1-Q3*	*Identify current strengths and gaps in reporting to inform chatbot creation in Goal 3*

Goal 1 MEASUREMENT PLAN

Activity #	Performance Measures	Data Collection Method and Timeframe
1.1.1	*Real-world reporting data preparation, cleaning and coding, analyses, and reporting*	*Data preparation by the end of Q1; Data cleaning and coding by the end of Q2; Data analyses by the end of Q3*
1.2.1	*Focus group development and refinement, conduct focus group, data cleaning & analyses*	*Development and refinement by the end of Q1; Focus group in Q2; Data cleaning and analyses by end of Q3*
1.3.1	*Focus group development and refinement, conduct focus group, data cleaning & analyses*	*Development and refinement by the end of Q1; Focus group in Q2; Data cleaning and analyses by end of Q3*
1.4.1	*Focus group development and refinement, conduct focus group, data cleaning & analyses*	*Development and refinement by the end of Q1; Focus group in Q2; Data cleaning and analyses by end of Q3*

GOAL 2:

Goal 2: *Better understand barriers to tips reporting—identification of concerning behavior, willingness to provide a tip about concerning behavior; and knowing how and where to report the concerning behavior*

Objective 2.1: *Conduct a lab-study with 100 local participants in Omaha, Nebraska using eye tracking to elucidate cognition involved in reporting and barriers to reporting*

Objective 2.2: *Conduct a national survey with 1,300 US adults to understanding barriers to tips reporting to improve generalizability of findings for a broader roll-out of the chatbot*

Goal 2 IMPLEMENTATION PLAN

Objectives	Activity	Inputs/Resources	Time Frame	Anticipated Outputs

Objective 2.1:	*Activity 2.1.1*	*Local sample of 100 participants in CAB Lab study with eye-tracking*	*Q1-Q4*	*Identify barriers to reporting to inform chatbot creation in Goal 3*
Objective 2.2:	*Activity 2.2.1*	*Survey a national sample of 1,300 US adults*	*Q1-Q4*	*Identify barriers to reporting to inform chatbot creation in Goal 3*

Goal 2 MEASUREMENT PLAN

Activity #	Performance Measures	Data Collection Method and Timeframe
2.1.1	*Study development and refinement, collect data, data cleaning & analyses*	*Development and refinement by the end of Q2; Data collection in Q3; Data cleaning and analyses by end of Q4*
2.2.1	*Study development and refinement, collect data, data cleaning & analyses*	*Development and refinement by the end of Q2; Data collection in Q3; Data cleaning and analyses by end of Q4*

GOAL 3:

Goal 3: *Create and test a chatbot aimed to improve and increase tips reporting. Most importantly, the proposed innovation project will create a chatbot for TTV tips reporting that can be used either as a stand-alone tool or be integrated into existing tips reporting platform.*

Objective 3.1: *Develop and refine the functional prototype chatbot to improve identification and reporting of potential terrorism and targeted violence threats.*

Objective 3.2: *Validate and test the chatbot's efficacy compared to a static reporting platform in a lab-based experiment with 200 local participants in Omaha, Nebraska using eye tracking to elucidate cognition behaviors*

Objective 3.3: *Validate and test the chatbot's efficacy compared to a static reporting platform in a national sample of 1,300 US adults to improve generalizability of findings for a broader roll-out of the chatbot*

Goal 3 IMPLEMENTATION PLAN

Objectives	Activity	Inputs/Resources	Time Frame	Anticipated Outputs
Objective 3.1:	*Activity 3.1.1*	*Chatbot prototype testing*	*Q1-Q4*	*Create a prototype chatbot that duplicates a*

				form, pilot test, and refine
Objective 3.2:	*Activity 3.2.1*	*Experiment with a local sample of 200 participants in CAB Lab study with eye-tracking to validate and test the chatbot*	*Q5-Q8*	*Develop and validate the chatbot to improve threat identification and reporting*
Objective 3.3:	*Activity 3.3.1*	*Experiment with a national sample of 1,300 US adults to validate and test the chatbot*	*Q5-Q8*	*Develop and validate the chatbot to improve threat identification and reporting*

Goal 3 MEASUREMENT PLAN

Activity #	Performance Measures	Data Collection Method and Timeframe
3.1.1	*Chatbot development, pilot testing, and refinement*	*Development by the end of Q2; Pilot testing by end of Q3 (using samples described in Goal 2); Refinement by end of Q4*
3.2.1	*Experiment development and refinement, collect data, data cleaning & analyses*	*Development and refinement by the end of Q6; Data collection in Q7; Data cleaning and analyses by end of Q8*
3.3.1	*Experiment development and refinement, collect data, data cleaning & analyses*	*Development and refinement by the end of Q6; Data collection in Q7; Data cleaning and analyses by end of Q8*

Joel S. Elson, Ph.D.

The Center for Collaboration Science
University of Nebraska at Omaha
(b)(6)

(b)(6)

Current Position

Assistant Professor of Information Technology Innovation
School of Interdisciplinary Informatics
University of Nebraska at Omaha

Research Interests

My research interests center around collaboration technology and decision-making in computer-mediated and mixed-initiative teams. My primary research focuses on human interaction with intelligent systems and more specifically, the impact of individual differences, system characteristics, and situational factors on human user's trust, feelings, and behavior toward those systems. I also study how technology systems can be optimized to meet business needs, improve decision-making, enhance information sharing, support effective communication and collaboration.

Areas of Specialization

Human-Computer Interaction • Neurophysiological & Psychometric Assessment • Trust

Education

2019   Ph.D. in Information Technology, University of Nebraska
2016   M.S. in Management Information Systems, University of Nebraska
2011   B.A. in Psychology, Creighton University

Certifications

2019   Project Management, University of Nebraska at Omaha
2018   Human Behavior and Biometric Research, iMotions Academy
2016   Systems Analysis & Design, University of Nebraska at Omaha

Funded Research & Grants

2020   Terrorism Prevention: Examination of Risk Assessment for Incarcerated Extremists, Principal Investigator [Department of Homeland Security/NCITE, $88,978]

2015-2020   Using Biometric Sensors for Legacy Systems Redesign, Co-Principal Investigator [Union Pacific, $432,194]

2020   Machine Learning on Customer Data for Task Technology Fit, Co-Principal Investigator [First National Bank of Omaha, $49,874]

2019   Nuclear Tool Exploration and Problem Construction, Investigator [USSTRATCOM, $19,947]

2016-2019   Using Eye-tracking and Neurophysiological Measures to Gauge User Experience With Novel System Interfaces, Principal Investigator [Omaha Steaks, $51,500]

2015-2019   Assessment of the Advanced Collaboration Enterprise System, Investigator [Triangle Experience Group , $70,874]

2018   Human-Machine Trust and Individual Differences, Principal Investigator [Graduate Research and Creative Activity Grant-UNO, $5,000]

2017-2018   Produce and Test Prototype Holographic Kiosks, Investigator [Nebraska Research Institute, $200,000]

2016   Quantifying Uncertainty, Principal Investigator [Graduate Research and Creative Activity Grant-UNO, $5,000]

Publications & Presentations

JOURNAL ARTICLES & REFEREED PROCEEDINGS

2021   Elson, J. S., Derrick, D. C., Merino, L. (2021). An Empirical Study Exploring Difference in Trust of Perceived Human and Intelligent System Partners. Hawaii International Conference on System Sciences

2020   Elson, J. S., Derrick, D. C., Ligon, G.S. (2020) Trusting a Humanoid Robot: Exploring Personality and Trusting Effects in a Human-robot Partnership. Hawaii International Conference on System Sciences

2019   Douglas C. Derrick, Isabella Seeber, Joel S. Elson (2019) Introduction to the Minitrack on Collaboration with Automation: Machines as Teammates.

2019   Elson, J. S., Derrick, D. C. (2019) Exploring Automated Leadership and Agent Interaction Modalities Hawaii International Conference on System Sciences

2018   Elson, J. S., Derrick, D. C., Ligon, G.S. (2018) Examining Trust and Reliance in Collaborations between Humans and Automated Agents. Hawaii International Conference on System Sciences

2018   Elson, J. S. Ligon, G.S., Derrick, D.C. (2018) Comparing Interface Influence on Users with Varying Expertise. International Conference on HCI in Business, Government, and Organizations.

2018   Derrick, D.C., Ligon, G.S., Elson, J. S. (2018) Automated Leadership: Influence from Embodied Agents. International Conference on HCI in Business, Government, and Organizations.

2017   Derrick, D.C., Ligon, G.S., Lundmark, L., Pleggenkuhle-Miles, E. Elson, J. S. (2017) Collaborative Distance: Multi-level Analysis Framework for Recommending Structure and Safeguards. Hawaii International Conference on System Sciences

TECHNICAL REPORTS & WHITE PAPERS

2018   Derrick, D.C., Ligon, G.S., Pleggenkuhle-Miles, E., Elson, J. S., D'Amato, A. (2018). Assessment of System Interface Impact on Visual Attention and Work Performance. Submitted to Union Pacific, Finance and IT Departments. Omaha, NE.

2017   Derrick, D.C., Ligon, G.S., Pleggenkuhle-Miles, E., Lundmark, L., Elson, J. S., Shelton, H. (2017). Exploring and Testing Design Element in Union Pacific Legacy Systems. Submitted to Union Pacific, Finance and IT Departments. Omaha, NE.

2017   Ligon, G.S., Derrick, D.C., Elson, J. S., Mazgaj, M., d'Amato, A., O'Malley, D., & Robinson, S. (2017). Intelligence support to deterrence operations. Final Technical Report for National Strategic Research Institute Task Order 53 in Support of United States Strategic Command. Omaha, NE.

2016   Derrick, D.C., Ligon, G.S., Taylor, J., Elson, J. S. (2016). Task Order 56: Test and Evaluation of the Advanced Collaboration Enterprise Service (ACES). Technical Report submitted to USSTRATCOM, J6 and the Office of the Secretary of Defense, A2I and RRTO.

2016   Derrick, D.C., Ligon, G.S., Pleggenkuhle-Miles, E., Lundmark, L., Elson, J. S., Shelton, H. (2016). System Design for Revenue System Portal. Submitted to Union Pacific, Finance and IT Departments. Omaha, NE.

Manuscripts in Progress

Elson, J. S., Derrick, D. C., (2021, under review). Exploration Into How Personality Relates to Stages of Trust in Intelligent Systems. AIS Transactions in Human Computer Behavior.

Elson, J. S., Derrick, D. C., (under review). The Impact of Trait Activation on Trust in an Intelligent System Partner: An Exploratory Study. Journal of Management Information Systems.

Elson, J. S., Derrick, D. C., (under review). Collaborating with Intelligent Systems: The Influence of Perceived Humanness on Trust with Humanoid Robot and Chatbot Partners. Social Robots: Services and Applications Journal.

Elson, J. S., Derrick, D. C., (in preparation, data analyzed). Cognitive and Affective Appraisal Theory of Trust. MIS Quarterly.

Elson, J. S., Derrick, D. C., Ligon, G. S. (in preparation, data analyzed). Optimizing Interface for Novice and Expert Decision Makers. International Journal for Human

Computer Interaction.

Elson, J. S., Ligon, G. S., Derrick, D. C., (in preparation, data analyzed). Behavioral and Neurophysiological Responses to Automated Leadership. Leadership Quarterly.

Presentations & Invited Addresses

2019	Elson, J. S., (2019) Psychological and Neurophysiological Techniques Applied to the Homeland Security Enterprise. Presentation Department of Homeland Security for Center of Excellence Finalist Site Visit. Omaha, NE.
2019	Elson, J. S., Ligon, G.S., Pleggenkuhle-Miles, E., (2019) Neurophysiological Measurement Techniques for Evaluating Assessment Instruments. Invited Talk to Gallup. Omaha, NE.
2019	Elson, J. S., Derrick, D. C., (2019) Collaborating with AI: Exploring Embodiment and System Use. Paper presented at the Midwest Academy of Management Conference. Omaha, NE.
2018	Elson, J. S., Derrick, D. C., (2018) Strategic Technological Assessment. Briefed Former Secretary of State, Chuck Hagel. Omaha, NE.
2017	Shelton, H., Elson, J.S., Derrick, D., Miles, E., Ligon, G. (2017) Using Oculometrics to Conduct Job Analyses for Knowledge Workers. Paper presented at the Society for Industrial and Organizational Psychology Conference. Orlando, FL.
2016	Ligon, G. S., Elson, J. S., Lunn, M., Steffensmeier, C., Hollis, G. (2016) Leadership for Collaboration. Training Session at the National Park Service. Omaha, NE.

Teaching Experience

2017	ITIN − 1110: Introduction to IT Innovation (Fall, 2017) Teaching evaluation: 4.60/5.00
2015	CIST − 3100: Information Technology Cyber Ethics (Spring, 2015) Graduate Assistant: responsible for lecture delivery, assessments & grading

Service

SERVICE TO PROFESSION

2021 - Present	Associate Editor, International Conference on Information Systems
2018 - Present	Mini-track co-chair, Hawaii International Conference on System Science
2017 - Present	Reviewer, Hawaii International Conference on System Science
2019 - Present	Reviewer, International Conference on Information Systems
2019 − Present	Reviewer, Pacific Asia Conference on Information Systems
2019 - Present	Reviewer, Americas Conference on Information Systems

SERVICE TO UNIVERSITY

2018 – Present | Mentor high school students for the PKI Summer Internship Program

2020 - Present | Attend weekly meetings for the Center of Collaboration Science and help oversee funded research, and graduate student workers

2020 - Present | Attend weekly CAB Lab student worker meetings to organize data collection, and train students on software, research, and statistical analysis techniques

2019 | Volunteer for Midwest Academy of Management

2017 | Volunteer for Big 12+ MIS Research Symposium

ERIN M. KEARNS

University of Alabama
Department of Criminology & Criminal Justice
(b)(6)

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EDUCATION

2016   American University, School of Public Affairs, Washington, DC   Ph.D.
        Fields: Criminology and Public Policy.
        Dissertation: If You See Something, Do You Say Something?: The Role
            of Legitimacy and Trust in Policing Minority Communities in Counterterrorism
2012   John Jay College of Criminal Justice, CUNY, New York, NY   M.A.
        Major: Forensic Psychology.
2005   Miami University, Oxford, OH   B.A.
        Majors: Political Science & Psychology. Minor: European Area Studies.

ACADEMIC APPOINTMENTS

2021, Fall -   Assistant Professor
                  University of Nebraska Omaha, School of Criminology & Criminal Justice
                  and National Counterterrorism Innovation, Technology, and Education Center
2017 - 2021   Assistant Professor
                  University of Alabama, Department of Criminology & Criminal Justice
2020, Spring   Research Associate (on pre-tenure research leave)
                  Miami University Dolibois European Center, Differdange, Luxembourg
2016 - 2017   Postdoctoral Research Fellow
                  Georgia State University, Global Studies Institute, Atlanta, GA

AWARDS

2016   Winner of the American Society of Criminology's Division of International Criminology
        Outstanding Student Paper Award
2015   Winner of the National Consortium for the Study of Terrorism and Responses to Terrorism
        (START) Symposium Best Student Paper Award

BOOK

1. 2020. **Kearns, E.M.** & Young, J.K. "Tortured Logic: Why Some Americans Support the
Use of Torture in Counterterrorism." *Columbia University Press.*

PEER REVIEWED JOURNAL ARTICLES

*graduate student; **undergraduate student

18. 2021. **Kearns, E.M.**, Federico, C., Asal, V., Walsh, J., *Betus, A. & Lemieux, A. "Intergroup
Images, Protest, and Terrorism." Online first, *Dynamics of Asymmetric Conflict.*
   • Media Coverage: *The Trace*

17. 2020. *Betus, A., **Kearns, E.M.** & Lemieux, A. "How Perpetrator Identity (Sometimes)
Influences Media Framing Attacks as 'Terrorism' or 'Mental Illness.'" Online first, *Commu-
nication Research.*
   • Media Coverage: *Washington Post*

16. 2020. Ghazi-Tehrani, A. & **Kearns, E.M.** "Biased Coverage of Bias Crime: Examining Differences in Media Coverage of Hate Crimes and Terrorism." Online first, *Studies in Conflict & Terrorism*.

15. 2020. Lowrey-Kinberg, B., *Mellinger, H. & **Kearns, E.M.** "How Social Dominance Orientation Shapes Perceptions of Police." Online first, *Policing: An International Journal*.

14. 2020. Delehanty, C. & **Kearns, E.M.** "Wait, There's Torture in *Zootopia*?: Examining the Prevalence of Torture in Popular Movies." *Perspectives on Politics,18*(3): 835-850.
    - Media Coverage: *Cinemascene FilmTalk, Tuscaloosa News*

13. 2019. **Shupard, M. & **Kearns, E.M.** "Why Do Officers Support Community Policing?: A Cross-Departmental and Cross-Temporal Comparison."*Behavioral Sciences & the Law, 37*: 665-680.

12. 2019. **Kearns, E.M.**, **Ashooh, E. & Lowrey-Kinberg, B. "Racial Differences in Conceptualizing Legitimacy and Trust in Police." *American Journal of Criminal Justice, 45*: 190-214.

11. 2019. Dolliver, M. & **Kearns, E.M.** "Is it Terrorism: Public Perceptions, Media, and Labeling the Las Vegas Shooting." Online first, *Studies in Conflict & Terrorism*.

10. 2019. **Kearns, E.M.** "When to Take Credit for Terrorism?: A Cross-National Examination of Claims and Attributions." *Terrorism & Political Violence, 33*(1): 164-193.
    - Media Coverage: *The Economist*
    - 2016 ASC Division of International Criminology Outstanding Student Paper Award
    - 2015 START Symposium Best Student Paper Award

9. 2019. **Kearns, E.M.**, *Betus, A., & Lemieux, A. "Why Do Some Terrorist Attacks Receive More Media Attention Than Others?" *Justice Quarterly, 36*(6): 985-1022.
    - Select Media Coverage: *ABC Australia, Cato Institute, The Economist, Foreign Policy, MSNBC with Ari Melber, NPR's All Things Considered, NPR's Hidden Brain Podcast, NPR's Morning Edition, Reason, The Independent, The Washington Post*
    - Policy Coverage: *United Nations Secretary-General*

8. 2019. **Kearns, E.M.**, *Betus, A., & Lemieux, A. "When Data Don't Matter: Exploring Public Perceptions of Terrorism." *Studies in Conflict & Terrorism, 44*(4): 285-309.

7. 2018. **Kearns, E.M.**, Asal, V., Walsh, J., Federico, C., & Lemieux, A. "Political Action as a Function of Political Grievances and Social Identity: An Experimental Approach." *Studies in Conflict & Terrorism, 43*, 11: 941-958.

6. 2018. **Kearns, E.M.** "Exploring Officer Views of Community Policing in Counterterrorism." *Police Practice and Research, 21*, 1: 18-32.

5. 2018. **Kearns, E.M.** & Young, J.K. "If Torture is Wrong, What About *24*?: Torture and the Hollywood Effect." *Crime & Delinquency, 64*(12): 1568-1589.
    - Media Coverage: *CNN, Pacific Standard, Vox, The Washington Post*

4. 2017. Lemieux, A., **Kearns, E.M.**, Asal, V., & Walsh, J. "Support for Political Mobilization, Protest, and Terrorism in Egypt and Morocco: An Online Experimental Study." *Dynamics of Asymmetric Conflict, 10*(2-3): 124-142.

3. 2017. **Kearns, E.M.** "Why Are Some Police Officers More Supportive of Community Policing with Minorities than Others?" *Justice Quarterly, 34*(7): 1213-1245.

2. 2015. **Kearns, E.M.** "The Study of Torture: Why It Persists, Why Perceptions of It Are Malleable, and Why It Is Difficult to Eradicate." *Laws*, 5(1): 1-15.

1. 2014. **Kearns, E.M.**, **Conlon, B.L., & Young, J.K. "Lying About Terrorism." *Studies in Conflict & Terrorism*, 37(5): 422-439.

BOOK CHAPTERS

2. 2016. Young, J.K. & **Kearns, E.M.** "Empirical Challenges to Studying Terrorism and Homicide." in *The Handbook on Homicide*, eds. Fiona Brookman, Edward R. Maguire, and Mike Maguire. Wiley-Blackwell.

1. 2013. **Kearns, E.M.** & Young, J.K. "Military Tactics in Civil War." in *The Routledge Companion to Civil War Studies*, eds. Edward Newman and Karl DeRouen. Routledge.

UNDER REVIEW

3. **Kearns, E.M.** & *Betus, A. "Asymmetric Coverage of Asymmetric Violence: How the U.S. Media Report Far-Right Terrorism."

2. *Bowman, R. & **Kearns, E.M.** "How Race, Experience with Police, and Experience with Crime Influence Perceptions of Legitimacy and Trust in Police."

1. **Kearns, E.M.** & *Senn, S. "Examining Officer Support for Community Policing in Counterterrorism Over Time."

WORKING PAPERS - Draft Available

3. **Kearns, E.M.** "Why Are Some Crimes Reported to Police While Others Aren't?"

2. *Senn, S. & **Kearns, E.M.** "Officer Support for Community Policing with Racial Minorities Post-Ferguson."

1. *Sharo, C. & **Kearns, E.M.** "When to Call the Police?: How Crime Type and Contextual Factors Impact Crime Reporting."

WORKING PAPERS - Data Collected & Drafting in Progress

7. **Kearns, E.M.** "See Something, Say Something?: Reporting Potential Terrorism Activities to Police."

6. **Kearns, E.M.** "Teaching Statistics: A Quasi-Experimental Comparison of Traditional versus Flipped Classroom Models."

5. **Kearns, E.M.** & Delehanty, C. "Experimentally Testing Public Perceptions of Media Depictions of Torture."

4. **Kearns, E.M.** & Nix, J. "When do Policing Surveys Replicate?: A Review of Multi-Agency Studies."

3. Fisher, D. & **Kearns, E.M.** "Theorizing Terrorism within Criminological Scholarship."

2. Ghazi-Tehrani, A. & **Kearns, E.M.** "Differentiating Between Terrorism, Hate Crimes, and Other Violence: A Conceptual Approach"

1. *Betus, A., **Kearns, E.M.** & *Becker, M. "Media and Fear of Terrorism."

WORKING PAPERS - Funded & Data Collection Pending

1. **Kearns, E.M.** & Ghazi-Tehrani, A. "Differentiating Between Terrorism, Hate Crimes, and Other Violence: An Experimental Approach."

GOVERNMENT & POLICY REPORTS

4. 2020. "Terrorism as Communicative and Miscommunicative Violence." In *Counterterrorism Yearbook 2020*, Australian Strategic Policy Institute. Author.

3. 2015. "When to Claim: A Cross-National Study of Terrorist Attacks." National Consortium for the Study of Terrorism and Responses to Terrorism Research Brief. Author.

2. 2015. "The Role of Law Enforcement in Fighting Terrorism." in *Comprehensive Law Enforcement Review*, Department of Justice, Office of Community Oriented Policing Services (COPS). Consulting researcher and co-author.

1. 2015. *Presidential Task Force on 21st Century Policing*. Department of Justice, Office of Community Oriented Policing Services (COPS). Consulting researcher.

RESEARCH GRANTS

Funded

2018	Research Grants Committee (RGC) - $3,000, University of Alabama
2018	College Academy for Research, Scholarship and Creative Activity (CARSCA) - $4,327, University of Alabama
2015	Fellow, Peace & Violence Research Lab - $4,000, American University
2015	Doctoral Research Award - $4,994, American University
2014	Pre-Doctoral Fellowship, Terrorism Research Award - $5,000, National Consortium for the Study of Terrorism and Responses to Terrorism
2014	Faculty Support Research Grant - $10,000, American University
2013	School of Public Affairs Research Scholars Grant - $5,000, American University
2012	Graduate Assistantship - fully funded for four years, American University
2004	Undergraduate Summer Scholars Grant - $2,000, Miami University

Not Funded

2019	Consortium member through START/University of Maryland, Terrorism Prevention and Counterterrorism Research (TPCR) Center of Excellence (COE), PI, "Evaluating State-Level Initiatives to Prevent Terrorism and Targeted Violence," $339,514 for UA.
2019	Consortium member through Georgetown University, Terrorism Prevention and Counterterrorism Research (TPCR) Center of Excellence (COE), PI, "Reporting Terrorism and Targeted Violence," $233,000 for UA.
2019	Asal, V., **Kearns, E.M.**, Zhuang, J., Baxter, P., Weedon, S. & Jahanbani, N. "Lying about Killing: Deception in Security Claims and Behavior." *DoD Minerva Research Initiative*, $1,133,917 total, $92,452 for UA.
2014	**Kearns, E.M.**, Lemieux, A. & Young, J. "Media Depictions of Torture and Public Policy." *DoD Minerva Research Initiative*, $517,049.

PUBLIC ENGAGEMENT

Select Interviews

2021   The Loopcast hosted by Chelsea Daymon, February 24.
2020   Crime Talks hosted by Dr. Sarah Daly, October 26.
2019   Untenured Tracks, October 7.
2019   Police Chief Magazine, September.
2019   CBC Radio Canada, 6 interviews across CBC stations, August 6.
2018   NPR's All Things Considered, Code Switch segment, March 23.
2018   Humanity in the Headlines, February 24.
2017   Colorado Public Radio, November 9.
2017   ABC Australia, Radio National, July 6.
2017   NPR's Morning Edition, June 20.
2017   NPR's Hidden Brain podcast with Shankar Vedantam, June 19.
2017   CBS/KCBS Radio San Francisco with Susan Kennedy, March 19.
2014   CNN Newsroom with Brooke Baldwin, December 11.

Web-Based Publications

2019   Betus, A., **Kearns, E.M.**, & Lemieux, A. "Who's a Terrorist and Who's Mentally Ill? We looked at 10 years of news coverage to find out," *Washington Post*, August 8.
2019   **Kearns, E.M.** & Amarasingam, A. "How News Media Talk about Terrorism & What the Evidence Shows," *Just Security*, April 5.
2017   **Kearns, E.M.**. "An Expert on Political Violence Explains why the NRA's Ads Matter," *The Trace*, August 8.
2017   **Kearns, E.M.**, Betus, A., & Lemieux, A. "Yes, the Media Do Underreport Some Terrorist Attacks, Just not the Ones Most People Think," *Washington Post*, March 13.
2017   **Kearns, E.M.**, "Torture Doesn't Work, So Why are We Still Discussing It?" *Political Violence at a Glance*, February 2.
2014   **Kearns, E.M.** & Young, J.K., "Dramatic Depictions of Torture Increase Support for It," *Washington Post*, December 12.

TALKS

Invited

2021   Intelligence Community of Academic Excellence (IC CAE) hosted by the University of North Carolina at Charlotte.
2020   "Race, Ethnicity, and Policing in the United States." Hosted by the Peace Science Society.
2020   "Why do Americans Support Torture? Perspectives from Hollywood and the Academy." Presented at American University's School of Public Affairs.
2020   "Tortured Logic: Why Americans Support Torture in Counterterrorism." Presented at START, National Consortium for the Study of Terrorism and Responses to Terrorism.
2020   "Media (Mis)Representations of Terrorism." Miami University Dolibois European Center (cancelled due to COVID-19).
2020   "Tortured Logic." Presented at the University of Essex.
2020   "Lying about Terrorism." Presented at Royal Holloway, University of London.
2020   "How Groups Misrepresent Violence & Implications for Coding." Presented to the terrorism Prosecution Project (tPP) at Miami University.
2019   "Expanding the Counterterrorism Aperture: New Perspectives for a New Decade."

Panelist at the U.S. Department of State, Bureau of Intelligence & Research (INR)/National Counterterrorism Center (NCTC)/National Intelligence Council (NIC) annual conference.

2019 "Tortured Logic: Why Americans Support Torture in Counterterrorism." Presented at the Dayton International Peace Museum/Dayton Council on World Affairs.

2017 "Political Action as a Function of Grievance, Opportunity, Risk, and Identity: Experimental Approaches." Presented at the Department of Homeland Security

2014 "Torture and the Hollywood Effect." Presented for the DHS/START and SMA Technical Lecture Series

Recorded & Posted for General Use to UntenuredTracks during COVID-19

2020 "Policing Terrorism."
2020 "Media & Terrorism."
2020 "Lying about Terrorism."

CONFERENCE PARTICIPATION

- Academy of Criminal Justice Sciences: 2011, 2015, 2016
- American Political Science Association: 2014
- American Society of Criminology: 2011, 2012, 2014, 2015, 2016, 2017, 2018, 2019, 2020 (cancelled due to COVID-19)
- International Studies Association: 2017, 2018, 2019, 2020 (cancelled due to COVID-19), 2021
- Midwest Political Science Association: 2019
- Peace Science Society: 2020
- START Annual Symposium: 2015; 2016
- Strategic Multi-Layer Assessment (SMA): 2015

TEACHING EXPERIENCE

*denotes course that I developed

Graduate Courses Taught

- University of Alabama: Criminology Theory; Media & Crime*
- American University: Policing Terrorism*; Experimenting in Terrorism*; Terrorism in the 21st Century*; The Problem of Torture in Counterterrorism*

Undergraduate Courses Taught

- University of Alabama: Terrorism; Statistics; Research Methods; Homeland Security; The Problem of Torture in Counterterrorism*
- American University: Introduction to Criminology; Introduction to Justice Research
- Marymount University: Criminology; Introduction to Counterintelligence; Applied Research Methods

CONSULTING EXPERIENCE

2015 - 2016   Consulting Researcher
                 The Police Foundation

2014 - 2015   Consulting Researcher
                 Department of Justice, Community Oriented Policing Services (COPS)

NON-ACADEMIC WORK EXPERIENCE

2005 - 2010   Trial Services Consultant
                          Kroll Ontrack/TrialGraphix

SERVICE

Service to the Community

- WBHM Junior Board Member (2019-2021)
- Greater Birmingham Humane Society Volunteer (2019-2020)

Service to the Profession

- Editorial Board Member:
  - *Studies in Conflict & Terrorism* (2018 - present)
  - *Criminal Justice & Behavior* (2019 - present)
  - *Dynamics of Asymmetric Conflict* (2019 - present)
- Advisory Board Member:
  - The Terrorism Prosecution Project at Miami University (2018 - present)
- Ad Hoc Grant Reviewer: *National Institute of Justice*
- Ad Hoc Manuscript Reviewer: *American Behavioral Scientist*; *American Journal of Political Science*; *American Political Science Review*; *Communication Research*; *Comparative Political Studies*; *Conflict Management and Peace Science*; *Crime & Delinquency*; *Crime, Law & Social Change*; *Criminal Justice and Behavior*; *Criminology, Criminal Justice, Law & Society*; *Dynamics of Asymmetric Conflict*; *Global Crime*; *International Journal of Communication*; *International Journal of Human Resource Management*; *International Security*; *International Studies Quarterly*; *International Studies Review*; *Journal of Experimental Criminology*; *Journal of Global Security Studies*; *Journal of Interpersonal Violence*; *Journal of Peace Research*; *Journal of Research in Crime and Delinquency*; *Journal of Policing, Intelligence and Counter Terrorism*; *Journalism*; *Justice Quarterly*; *Mass Communication and Society*; *Media, War & Conflict*; *Migration Letters*; *Perspectives on Terrorism*; *Police Practice and Research: An International Journal*; *Policing: An International Journal*; *Policing & Society*; *Political Psychology*; *Political Research Quarterly*; *Public Administration Review*; *Security Studies*; *Social Science Research*; *Sociological Quarterly*; *Studies in Conflict & Terrorism*; *Terrorism and Political Violence*
- Ad Hoc Book Proposal Reviewer: *Oxford University Press*; *Routledge*
- Ad Hoc Book Reviewer: *Oxford University Press*
- Committee Chair:
  - ASC, Program Committee, Sub-Area: State Crime, Political Crime, and Terrorism (2021)
  - ASC, Division of International Criminology, Graduate Fellowship Competition (2020, 2021)
- Committee Member:
  - ASC, Division of Policing, Election Committee (2020)
  - ASC, Division of Terrorism and Bias Crimes, Social Media (2018 - present)
  - ASC, Division of Terrorism and Bias Crimes, Student Paper Competition (2018)
  - ASC, Division of International Criminology, Graduate Fellowship Competition (2019)
  - ASC, Division of International Criminology, Student Paper Competition (2018, 2019)

Service to the University

- Faculty Mentor, Tide Together, University of Alabama (2018)

- Judge for Crimson Classic Mock Trial Tournament, University of Alabama (2018)
- Institutional Review Board (IRB) Student Representative, American University (2014 - 2016)
- Judge for SPA Undergraduate Research Symposium, American University (2013, 2014)
- Greenberg PhD Seminars for Effective Teaching, Selected Participant, American University (2012 - 2014)
- Psi Chi, President, John Jay College of Criminal Justice (2011 - 2012)
- Master's Student Research Group, Mentor, John College of Criminal Justice (2011 - 2012)
- Cheryl Williams Award, Selection Committee, John Jay College of Criminal Justice (2011)

Service to the Department

- Graduate Committee, University of Alabama (2017 - 2020)
- Diversity Committee, University of Alabama (member 2017 - 2020; chair 2020 - present)
- Scholarship Committee, University of Alabama (2019 - present)
- Faculty Search Committee, University of Alabama (2018 - 2019)
- PhD Program Development Committee, University of Alabama (2018 - 2019)
- Colloquium Committee, University of Alabama (2017 - 2019)
- Terrorism and Security Policy Search Committee, American University (2013, 2014)

Student Research Supervision

PhD

- Allison Betus — Committee Member, Georgia State University (2019-present)

Masters

- Emma Huffman — Chair, University of Alabama (2020-present)
- Rachel Simon — Committee Member, Texas A&M International University (2020-present)
- Rachel McNealy — Research independent study, University of Alabama (2019; ASC presentation & in revision for publication)
- Carol Ann Sharo — Chair, University of Alabama (2019; ASC presentation & in revision for publication)
- Epiphany Storey — Committee Member, University of Alabama (2019)

Undergraduate

- Grace Tully — Chair, University of Alabama (2019-present)
- Mary Shupard — Chair, University of Alabama (2019; ASC poster & published in peer-reviewed journal)
- Emma Ashooh— Co-Chair, American University (2016; published in peer-reviewed journal)
- Josh Eisenberg— Chair, American University (2016)
- Erin Connolly & Lorrin Melanson — Chair, American University (2015; ASC poster)
- John Driscoll, Chris Tonelli, Greg Schaefer & Felicia Sych — Chair, American University (2015; ASC poster)
- Holly Wenger — Co-Chair, Marymount University (2015)
- Brendan Conlon — Co-Chair, American University (2013; published in peer-reviewed journal)

ADDITIONAL TRAINING

2019   ICPSR (R: Learning by Example)
2015   ICPSR (Time-Series Analyses, Bayesian Analyses, R & Qualitative Methods)

2014 Stata (Estimating Average Treatment Effects)
2014 American University (Certification to teach online and hybrid courses)
2011 Summer School on Crime, Law and Psychology, Prague, Czech Republic
2011 U.S Department of Justice, FBI, Behavioral Science Unit, Certificate of Research in Violent Behavior

Douglas C. Derrick

Mutual of Omaha Distinguished Professor of Information Science and Technology
Director, The Center for Collaboration Science
Director, Innovation and Transition, DHS NCITE Center
University of Nebraska at Omaha

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EDUCATION

PhD, Management Information Systems, University of Arizona, Tucson, AZ, 2011.

MBA, San Jose State University, San Jose, CA, 2001.

Master of Computer Science, Texas A&M University, College Station, TX, 1998.

BS in Computer Science, US Air Force Academy, Colorado Springs, CO, 1996. Distinguished Graduate (top 6% of all graduates)

PUBLICATIONS

1. Logan, M. K., Damadzic, A., Medeiros, K., Ligon, G. S., & **Derrick, D. C.** (2021) Constraints to Malevolent Innovation in Terrorist Attacks. *Psychology of Aesthetics, Creativity, and the Arts*. In-press.

2. Hall, M., Logan, M., Ligon, G. S. & **Derrick, D. C**. (2020), Do Machines Replicate Humans? Toward a Unified Understanding of Radicalizing Content on the Open Social Web. *Policy & Internet 12(1)* pp. 109-138.

3. Logan, M. K., Ligon, G. S., & **Derrick, D. C.** (2020) Measuring Tactical Innovation in Terrorist Attacks. *The Journal of Creative Behavior* 54(4) pp. 926-939.

4. Harms, M., Reiter-Palmon, R., & **Derrick, D. C.** (2020) The role of information search in creative problem solving. *Psychology of Aesthetics, Creativity, and the Arts* 14(3) pp. 367-380.

5. Sporer, K., Logan, M. K., Ligon, G. S., & **Derrick, D. C.** (2019) #JESUISPARIS?: An Appeal to Hypocrisy and Justifications for Mass Casualty Violence. *Journal of Qualitative Criminal Justice & Criminology* 8(1) pp. 57-82.

6. Ligon, G. S., **Derrick. D. C.,** Harms, M. M. (2018) Destruction through Collaboration: How Terrorists Work Together toward Malevolent Innovation, *Team Creativity and Innovation,* eds. Reiter-Palmon, R., pp. 437-455.

7. Ligon, G. S., **Derrick. D. C.** (2017) Leader Structure and Consideration for Innovation, *Handbook of Research on Leadership and Creativity*, eds. Mumford, M. D., Hemlin, S., Edward Elgar Publishing, pp. 205-227.

8. Logan, M., Ligon, G. S., **Derrick. D. C**. (2017) Applying an Organizational Framework to Examine Jihadi Organizations as an Industry, *Homeland Security Affairs* 13, Article 6 (October 2017).

9. Ligon, G. S., Sporer, K., **Derrick D. C.** (2017) Violent Innovation: Creativity in the Domain of Terrorism, Book Chapter, *The Cambridge Handbook of Creativity Across the Domains*, eds. Kaufman, J. C., Glaveanu, V. P., Baer, J. Cambridge University Press, pp. 507-522.

10. **Derrick, D. C.**, Ligon, G. S., Harms, M. M., Mahoney, W. R. (2017) Cyber Sophistication Assessment Methodology for Public Facing Terrorist Websites, *Journal of Information Warfare*, 2017:16 (April), 13-30.

11. **Derrick, D. C.,** Sporer, K., Church, S., & Ligon, G. S. (2016). Ideological rationality and violence: An exploratory study of ISIL's cyber profile. *Dynamics of Asymmetric Conflict*, 9:1–3, 57–81.

12. Twyman, N. W., Proudfoot, J. G., Schuetzler, R. M., Elkins, A. C., **Derrick, D. C.** (2015) Robustness of Multiple Indicators in Automated Screening Systems for Deception Detection, *Journal of Management Information Systems*, 32:4, 215-245.

13. Nunamaker, J. F., Briggs, R. O., **Derrick, D. C.**, Schwabe, G. (2015) Maximizing the Impact of Information Systems Research: Achieving Rigor and Relevance by Going the Last Research Mile. *Journal of Management Information Systems* 32:3, 10-47.

14. Ligon, G. S, Harms, M. M., **Derrick, D. C.** (2015) Lethal Brands: How VEOs Build Reputations. *Journal of Strategic Studies* 8(1), 27-42.

15. Arnold, N.R., Mahoney, W.R., **Derrick, D. C.**, Ligon, G.S., Harms, M.M. (2015) Feasibility of a Cyber Attack on National Critical Infrastructure by a Non-State Violent Extremist Organization. *Journal of Information Warfare* 14(1), 83-94.

16. Eshelman, R. E., **Derrick, D. C.** (2015) Relying on the Kindness of Machines? The Security Threat of Artificial Agents. *Joint Forces Quarterly* 77(2), 70-75.

17. **Derrick, D. C.**, Ligon, G. S. (2014) The Affective Outcomes of Using Influence Tactics in Embodied Conversational Agents. *Computers in Human Behavior* 33(1), 39-48.

18. Pickard, M., Burgoon, J. K., **Derrick, D. C.** (2014) Towards an Objective Linguistic-Based Measure of Perceived Embodied Conversational Agent (ECA) Power and Likeability. *International Journal of Human Computer Interaction* 30(6), 495-516.

19. **Derrick, D. C.**, Meservy, T. O., Jenkins, J., Burgoon, J. K., Nunamaker, J. F. (2013) Detecting deceit in chat-based communication using typing behavior and message cues. *ACM Transactions on Management Information Systems* 4(2), 9:1-21.

20. Elkins, A. C., **Derrick, D. C.** (2013) The Sound of Trust: Voice as a Measurement of Trust During Interactions with Embodied Conversational Agents. *Group Decision and Negotiation* 22(5), 897-913.

21. Reyes, L. F, **Derrick, D. C.**, Langhals, B. T., Nunamaker J. F. (2013). Collaborative Cross-Border Security Infrastructure and Systems: Identifying policy, managerial and technological challenges. *International Journal of E-Politics*, 4(2), 21-38.

22. Boedeker, B., Bernhagen, M., **Derrick, D. C.,** Abadia de Barbara, A., Del Real Colomo, A., Hillan Garcia, L., Nicholas, T. (2013). A demonstration of the Storz C-CAM in endoscopic

imagery projection for far forward battlefield telemetric support and training. *Studies in Health Technology and Informatics*, 184, 51–55.

23. Twitchell D., Jensen M., **Derrick D. C.**, Burgoon J. K., and Nunamaker J. F. (2013), Negotiation outcome classification using language features, *Group Decision and Negotiation,* 22(1), 135-151.

24. Burgoon, J. K., **Derrick, D. C**., & Elkins, A. C. (2011). Sociocultural Intelligence and Intelligent Agents. *IEEE Intelligent Systems*, 26(4), 84-87.

25. **Derrick, D. C.,** Jenkins, J., & Nunamaker Jr, J. F. (2011). Design Principles for Special Purpose, Embodied, Conversational Intelligence with Environmental Sensors (SPECIES) Agents. *AIS Transactions on Human-Computer Interaction*, 3(2), 62-81.

26. Nunamaker Jr., J. F., **Derrick, D. C**., Elkins, A. C., Burgoon, J. K., & Patton, M. W. (2011). Embodied Conversational Agent (ECA) Based Kiosk for Automated Interviewing. *Journal of Management Information Systems*, 28(1), 17-49.

27. **Derrick, D. C.,** Elkins, A. C., Burgoon, J. K., Nunamaker Jr, J. F., & Zeng, D. D. (2010). Border Security Credibility Assessments via Heterogeneous Sensor Fusion. *IEEE Intelligent Systems*, 25(3), 41-49.

28. **Derrick, D. C.** (1996). It Doesn't Fit: The Dilemma of Computer Software and Patent/Copyright Law. *Electronic Journal of Law*, 3(1), 1-8.

Journal Articles in Progress

1. Elson, J. S., Derrick, D. C. *Examining Trust and Reliance in Collaborations between Humans and Automated Agents* (In Review)
2. Derrick, D. C., Elson, J. S., Ligon, G. S., Harms, M. M. *The Effects of Personality on Interactions with Automated Agents* (In Review)
3. Derrick, D. C., Elson, J. S. *Methodological Recommendations for Eye-Tracking in Information Systems Research* (In Review)
4. Derrick, D.C., Ligon, G. S., Logan, M. K., Elson, J. S. *Individual Differences in Followers' Preference for Virtual Leaders* (In Preparation)

CONFERENCE PROCEEDINGS AND PRESENTATIONS

1. Mazgaj M., d'Amato, A., Elson, J. S., Derrick, D. C. (2021) Exploring the Effects of Real-Time Hologram Communication on Social Presence, Novelty, and Affect. *Hawai'i International Conference on System Sciences (HICSS)*, Jan 5-8, 2021, HI.

2. Elson, J. S., Derrick, D. C., Merino, L. (2021) An Empirical Study Exploring Difference in Trust of Perceived Human and Intelligent System Partners. *Hawai'i International Conference on System Sciences (HICSS)*, Jan 5-8, 2021, HI.

3. Elson, J. S., Derrick, D. C., Ligon, G.S. (2020) Trusting a Humanoid Robot: Exploring Personality and Trusting Effects in a Human-robot Partnership. *Hawai'i International Conference on System Sciences (HICSS)*, Jan 8-11, 2020, Maui, HI.

4. D'Amato, A., Logan, M. K., & Derrick, D. C. (2019) Exploring the Brand: Brand Personality of ISIS Messaging. *Midwest Academy of Management*, Oct 10-12, 2019, Omaha, NE. -- <u>*BEST PAPER (Nominee)*</u>

5. Elson, J. S., & Derrick, D. C. (2019) Collaborating with Artificial Intelligence: Exploring the Relationship Between System Embodiment, Utilization and Trust. *Midwest Academy of Management*, Oct 10-12, 2019, Omaha, NE.

6. Derrick, D. C., Elson, J. S. (2019) Exploring Automated Leadership and Agent Interaction Modalities. *Hawai'i International Conference on System Sciences (HICSS)*, Jan 8-11, 2019, Maui, HI.

7. Derrick, D. C., & Elson, J. S. (2018). Automated leadership: Influence from embodied agents. In *HCI in Business, Government, and Organizations - 5th International Conference, HCIBGO 2018, Held as Part of HCI International 2018, Proceedings* (pp. 51-66). (Lecture Notes in Computer Science; Vol. 10923 LNCS). Springer Verlag. -- BEST PAPER (Winner)

8. Elson, J.S. Ligon, G.S., Derrick, D.C. (2018) Comparing Interface Influence on Users with Varying Expertise. International Conference on HCI in Business, Government, and Organizations *HCI in Business, Government, and Organizations - 5th International Conference, HCIBGO 2018, Held as Part of HCI International 2018, Proceedings*. (Lecture Notes in Computer Science; Vol. 10923 LNCS). Springer Verlag.

9. Hall, M., Logan, M., Church, S. Ligon, G., Derrick, D. C. (2018) Computational Identification of Latent Radical Content from Online Social Media. Internet, Policy, and Politics 2018: Long Live Democracy?. Oxford Internet Institute.

10. Molfese, P., Nielson, D., Molfese, D., Bandettini, P., Windisch, S., Derrick, D. C., Ligon, G. S., & Simi, P. (2018). Simultaneous EEG-fMRI Reveal Temporal-Spatial Bias Patterns in Former White Supremacists. *Annual meeting of the Organization for Human Brain Mapping*, June 2018, Singapore.

11. Elson, J. S., Derrick, D. C., Ligon, G. S (2018) Examining Trust and Reliance in Collaborations between Humans and Automated Agents. *Hawai'i International Conference on System Sciences (HICSS)*, Jan 4-7, 2018, Kona, Big Island, HI.

12. Derrick, D. C., Elson, J. S. (2018) Methodological Recommendations for Eye-Tracking in Information System Research. *Hawai'i International Conference on System Sciences (HICSS)*, Jan 4-7, 2018, Kona, Big Island, HI

13. Lundmark, L. W., Miles, E. P., Derrick, D. C., Ligon, G. S. (2017) Problem Complexity and Collaborative Distance: A Multi-level Framework for Understanding Effective Collaborations. *Strategic Management Society Special Conference – Costa Rica*, Dec 12-14, 2017, San José, Costa Rica

14. Derrick, D. C., Allen, J. A., Ward, K. W., (2017) Reprocessability and Engagement: Comparing Text to Human Forms for Information Conveyance. *Interservice/Industry Training, Simulation, and Education Conference,* Nov 27-Dec 1, 2017, Orlando, FL

15. Lundmark, L.W., Nickerson, J. A., Derrick, D.C. (2017) Comprehensiveness in Wicked Problem Formulation: Models of Cognition in the Design and Selection of Valuable Strategies. *Annual Meeting of the Academy of Management*, Aug 4-8, 2017, Atlanta, GA.

16. Shelton, H., Derrick, D. C., Ligon, G. S., Elson, J. S., Miles, E. P. (2017). Using Oculometrics to Conduct Job Analyses for Knowledge Workers. *Society for Industrial and Organizational Psychology Annual Conference,* Apr 27-29, 2017, Orlando, FL

17. Scheller, E., Reiter-Palmon, R., Kocsis, D., Ligon, G. S., Derrick, D. C., Jensen, S., Roysten, R. P., Sands, S. J., Alothaim, A., Harland, L. K., de Vreede, G. J. (2017). Leadership Development Through Virtual Teams and Case-Based Discussion. *Society for Industrial and Organizational Psychology Annual Conference ,* Apr 27-29, 2017, Orlando, FL

18. Derrick, D. C., Ligon, G. S., Lundmark, L., Pleggenkuhle-Miles, E., Elson, J. S. (2017). Collaborative Distance: Multi-level Analysis Framework for Recommending Collaboration Structure and Safeguards. *Hawai'i International Conference on System Sciences (HICSS)*, Jan 5-8, 2017, Kona, Big Island, HI.

19. Crowe, J. D., Jones L., Duralia, D. P., Ligon, G. S., Derrick, D. C. (2016). Experiential Learning for Leader Development in the Military Domain. *Society for Industrial and Organizational Psychology Annual Conference,* Apr 14-16, 2016, Anaheim, CA.

20. Derrick, D. C., Church, S., Sporer, K., Ligon, G. S. (2016). Social Media, Open Architectures and Ideological Rationality. *Hawai'i International Conference on System Sciences (HICSS)*, Jan 5-8, 2016, Kauai, HI.

21. Lundmark, L., Derrick, D. C., Crowe, J. D., Lunn, M., Ligon, G. S. (2016). An Investigation of Problem Formulation Comprehensiveness on Solution Novelty and Elegance in Team Collaboration. *Hawai'i International Conference on System Sciences (HICSS)*, Jan 5-8, 2016, Kauai, HI.

22. Ligon, G. S., Steffensmeier, C. J., Derrick, D. C. (2016). Virtual Leadership: Leader Preferences Based on Individual Differences and On-line Influence. *Hawai'i International Conference on System Sciences (HICSS)*, Jan 5-8, 2016, Kauai, HI.

23. Harms, M. M., Reiter-Palmon, R., Mitchell, K. S., Derrick, D. C., Crowe, J. D. (2015). The Impact of Problem Construction and Information Search on Creativity. *Society for Industrial and Organizational Psychology Annual Conference,* Apr 23-25, 2015, Philadelphia, PA.

24. Zongrone, B., Derrick, D. C., Ligon, G. S. (2015). Individual Differences that Predict Interactions in Mixed-Initiative Teams. *Society for Industrial and Organizational Psychology Annual Conference,* Apr 23-25, 2015, Philadelphia, PA.

25. Jensen, S., Reiter-Palmon, R., Harland, L., Sands, S., Ligon, G., Derrick, D.C., de Vreede, G.J., Alothaim, A., & Kocsis, D. (March, 2015). "Tough Love…or Killing a Dream?", Critical Incident & Teaching Note, *MBAA Society for Case Research Annual Meeting*, Chicago, IL

26. Reiter-Palmon, R., Sands, S., Kocsis, D., Alothaim, A., Ligon, G., Harland, L., Derrick, D. C., de

Vreede, G.J., & Jensen S. (2015). Self-perception of creativity and creativity training. *2015 American Psychological Association Annual Convention*, Toronto, Ontario, Canada.

27. Zongrone, B., Derrick, D. C., Ligon, G. S. (2015). Individual Differences That Predict Interactions in Mixed-Initiative Teams. *Hawai'i International Conference on System Sciences (HICSS)*, Jan 5-9, 2015, Kauai, HI. -- <u>*BEST PAPER (Winner)*</u>

28. Harms, M., Ligon, G. S., Derrick, D. C., & Harris, D. (March, 2014). *Leader decapitation as an influence strategy for VEOs.* Paper presented in the symposium (Sawyer, J., Chair) on Deterrence of Violent Non-State Actors. *International Studies Association Conference*, Toronto, Canada.

29. Derrick, D. C., Read, A., Ligon, G. S. (2014). Developing Entrepreneurial Skills in IT Courses: The Role of Agile Software Development Practices in Producing Successful Student Initiated Projects. *Hawai'i International Conference on System Sciences* (HICSS), Jan 6-9, 2014, Big Island, HI.

30. Derrick, D. C., Read, A. (2013). An Information Taxonomy for Improving Rational Decision Making. *Hawai'i International Conference on System Sciences* (HICSS), Jan 7-10, 2013, Maui, HI.

31. Read, A., Derrick, D. C. (2013). A Feasibility Study for Automated Impostor Detection Using Facial Recognition. *Hawai'i International Conference on System Sciences* (HICSS), Jan 7-10, 2013, Maui, HI.

32. Derrick, D. C., Read, A., Nguyen, C., Callens, A. & de Vreede, G. J. (2013). Automated Group Facilitation for Gathering Wide Audience End-User Requirements. *Hawai'i International Conference on System Sciences* (HICSS), Jan 7-10, 2013, Maui, HI.

33. Derrick, D. C., Read, A. (2012). Enriching Human-Computer Interactions Via a Facial Recognition in an Embodied Agent. Presented at the *Workshop on Information Technologies and Systems*, Dec 15-16, 2012, Orlando, FL.

34. Alipour, H., Zeng, D. D., & Derrick, D. C. (2012). AdaBoost-based Sensor Fusion for Credibility Assessment. Presented at the *IEEE International Conference on Intelligence and Security Informatics*, Jun 11-14, 2012, Washington, D.C.

35. Nunamaker Jr., J. F., Elkins, A. C., Twyman, N., & Derrick, D. C. (2012). AVATAR System for Automated Credibility Assessment and Interviewing. Presented at the *IEEE International Conference on Intelligence and Security Informatics*, Jun 11-14, 2012, Washington, D.C.

36. Derrick, D. C., de Vreede, G. J., Read, A. S. (2012). SPECIES Agents for Automated Facilitation of Mass Collaboration. *Group Decision and Negotiation Conference*, May 21-24, 2012, Recife, Brazil.

37. Derrick, D. C., de Vreede, G. J. (2012). Automated Transactional Leadership in Ad-Hoc, Virtual Teams. *Group Decision and Negotiation Conference*, May 21-24, 2012, Recife, Brazil.

38. Oh, O., Nguyen, C., de Vreede, G. J., Derrick, D. C. (2012). Collaboration Science in the Age of Social Media: A Crowdsourcing View. *Group Decision and Negotiation Conference*, May 21-24, 2012, Recife, Brazil.

39. Luna-Reyes, L., Andersen, D. F., Andersen, D. L., Derrick, D. C., & Jarman, H. (2012). Full Information Product Pricing (FIPP) Regimes: Policy Implications for US-Mexico Sustainable Commerce. Presented at the *Puentes Consortium Annual Conference*, April 26, 2012,

Houston, TX.

40. Elkins, A. C., Derrick, D. C., Gariup, M. (2012). The Voice and Eye Gaze Behavior of an Imposter: Automated Interviewing and Detection for Rapid Screening at the Border. *European Chapter of the Association for Computational Linguistics (EACL)*, Apr 23-27, 2012, Avignon, France.

41. Derrick, D. C., Meservy, T. O., Burgoon, J. K., & Nunamaker Jr, J. F. (2012). An Experimental Agent for Detecting Deceit in Chat-based Communication. *Hawai'i International Conference on System Sciences* (HICSS), Jan 4-7, 2012, Maui, HI.

42. Elkins, A. C., Derrick, D. C., Burgoon, J. K., & Nunamaker Jr, J. F. (2012). Predicting Users' Perceived Trust in Embodied Conversational Agents Using Vocal Dynamics. *Hawai'i International Conference on System Sciences* (HICSS), Jan 4-7, 2012, Maui, HI.

43. Derrick, D. C. (2011). Incorporating Influence Tactics into a Decision Aid: Tested via a Dictator Game (Vol. 1). *Presented at the Midwest Association for Information Systems (MWAIS)*, Omaha, NE.

44. Derrick, D. C., Moffitt, K., & Nunamaker, J. F. (2011). Gaze Behavior as a Guilty Knowledge Test: Initial Exploration for Use in Automated, Kiosk-based Screening. *Symposium on Credibility Assessment and Information Quality in Government and Business. Presented at the Hawai'i International Conference on System Sciences (HICSS)*, Koloa, Hawaii, USA.

45. Derrick, D. C., Elkins, A. C., & Burgoon, J. K. (2010). Cardiovascular Responses during the Mock Crime Interviews: Assessment Using Laser Doppler Vibrometry. *Symposium on Credibility Assessment and Information Quality in Government and Business. Presented at the Hawai'i International Conference on System Sciences (HICSS)*, Waikoloa, Big Island, Hawaii, USA.

46. Derrick, D. C. (2010). Advanced Human-Agent Interaction: Embodied Intelligent Agents for Automated Interviewing. *Doctoral Consortium. Presented at the Americas Conference on Information Systems (AMCIS)*, Lima, Peru.

47. Derrick, D. C., & Nunamaker Jr, J. (2010). Avatar-based Kiosk with Interpersonal Sensors. *Presented at the Workshop on Information Technologies and Systems (WITS)*, St. Louis, MO.

48. Nunamaker Jr, J., Luna-Reyes, Luis, Langhals, B. T., & Derrick, D. C. (2010). Border Security Infrastructure and Systems. *Presented at the Puentes Consortium Annual Conference*, Houston, TX.

49. Derrick, D. C. (2009). Pilot study to classify deceptive, synchronous, computer-mediated communication using lexical features. *Symposium on Credibility Assessment and Information Quality in Government and Business. Presented at the Hawai'i International Conference on System Sciences (HICSS)*, Waikoloa, Big Island, Hawaii.

50. Burgoon, J. K., Derrick, D. C., Elkins, A. C., Humphreys, S. L., Jensen, M. L., Diller, C. B. R., & Nunamaker, J. F. (2008). Potential noncontact tools for rapid credibility assessment from physiological and behavioral cues. *Presented at the IEEE International Carnahan Conference on Security Technology*, Prague, Czech Republic.

OTHER SIGNIFICANT PUBLICATIONS

1. Derrick, D.C., Ligon, G.S., Taylor, J., & Zongrone, B.Z. (2015). *Decision Support Tools for Distributed Teams in Crisis Decision Making.* Technical Report, USSTRATCOM Task Order 23.

2. Ligon, G.S., Derrick, D.C., Lundmark, L., Pleggenkuhle-Miles, E., & Francis, K. (2015). *Collaborative Distance: An Examination of Public-Private Partnerships in Protecting National Critical Infrastructure.* Technical Report to the Department of Homeland Security, Science and Technology Directorate, Cyber Security Division.

3. Ligon, G.S., Derrick, D.C., & Crowe, J.D. (2015). *USSTRATCOM Fellowship Program: Year Two Review.* Technical Report to USSTRATCOM, J76 Training and Development Directorate.

4. Ligon, G.S., Harms, M., Derrick, D.C., Simi, P., Mahoney, W., Beard, J., Schaefer, M., Brooks, T. (2014). *The Convergence of CyberSpace and CWMD Pathways, Phase II. Final Technical Report,* USSTRATCOM Task Order 31.

5. Ligon, G.S., Derrick, D.C., Simi, P., Mahoney, W., & Harms, M. (2014). *The Convergence of CyberSpace and CWMD.* Technical Report, USSTRATCOM Task Order 30.

6. Derrick, D. C. (2008). Autonomous agents for deception detection. *Presented at the Arizona Symposium on Frontiers in Information Technology and Applications (http://fita2008.ecom.arizona.edu)*, Tucson, AZ.

7. Millman, E., & Derrick, D. C. (2005). Software protection assessments. *Presented at the Dayton Information Security Conference*, Dayton, OH.

8. Derrick, D. C., & Adams, R. (2002). A framework for conducting enterprise vulnerability assessments. *Presented at the Phoenix Challenge Conference*, Washington, DC.

9. Derrick, D. C. (1999). Salsa: Security Application Launcher for System Administrators. Dayton, OH: Storming Media.

PATENTS

1. Embodied Conversational Agent-Based Kiosk for Automated Interviewing, *Provisional Patent*, filed December 14, 2011.

2. Decision-Support and Telemedicine System For Perioperative Care, *Provisional Patent*, filed June 13, 2012.

CONTRACTS AND GRANTS

- $36,500,000 grant from Department of Homeland Security (DHS) for "*National Counterterrorism, Innovation, Technology and Education (NCITE) Center*". Establishes the University of Nebraska at Omaha as a DHS Center of Excellence for Counterterrorism Research. March 2020 – June 2030. **Co-Principal Investigator**.

- $432,194 contract from Union Pacific Railroad awarded to the University of Nebraska at Omaha for "*Legacy System Redesign*". September 2015 – July 2021. Understand if there are user experience improvements that could be implemented, productivity gains that are possible, and overall redesign elements of legacy software. **Principal Investigator.**

- $54,594 contract from First National Bank of Omaha for "*Creating the Branch of the Future*". Using Machine Learning algorithms on customer data to determine task-technology fit for clusters of bank users. March 2020 – January 2021. **Principal Investigator**.

- $880,026 grant from USCYBERCOM awarded to the University of Nebraska at Omaha for "*Operationalizing Cyber Situational Awareness Research: Capability Exploration*". August 2018 – July 2021. **Principal Investigator.**

- $162,000 grant from the Department of Homeland Security (DHS) Center for Accelerating Operational Efficiency (CAOE) awarded to the University of Nebraska at Omaha for "*National Media Exploitation Center Rapid Visualization*". Sep 2019 – Sep 2020. Using algorithms for rapid extraction and visualization of captured mobile devices. **Co-Principal Investigator.**

- $280,000 grant from the Department of Homeland Security (DHS) Center for Accelerating Operational Efficiency (CAOE) awarded to the University of Nebraska at Omaha for "*Emerging Violent Extremist Organizations (VEO) threats to the Homeland*". June 2018 – July 2020. An assessment of VEO features in relation to their capacity for innovative and violent performance against the homeland. **Co-Principal Investigator.**

- $19,947 contract from United States Strategic Command (USSTRATCOM) awarded to the University of Nebraska at Omaha for "*Nuclear Tool Exploration and Problem Construction*". Jun 2019 – Sep 2019. Evaluate tools for nuclear effects and perform problem construction and design recommendations. **Principal Investigator.**

- $100,000 from the Department of Homeland Security (DHS) Center for Accelerating Operational Efficiency (CAOE) awarded to the University of Nebraska at Omaha for "*Organizational Sophistication and Terrorism in the Philippines and Age of Disruption*". July 2018 – June 2019. **Co-Principal Investigator.**

- $180,000 from Nebraska Research Institute for "*Human-Machine Collaboration*". Creation of the Human-Machine Collaboration Laboratory June 2018 – July 2019. **Principal Investigator.**

- $200,000 grant from The Combating Terrorism Technical Support Office for "*Leadership of the Extreme and Dangerous for Innovative Results (LEADIR) Dataset*". October 2018 – December 2019. **Co-Principal Investigator.**

- $265,191 grant from the Department of Homeland Security (DHS) National Center for Studies of Terrorism and Responses to Terrorism (START) awarded to the University of Nebraska at Omaha for "*Organizational Determinants of Violence and Capacity for Destruction*". August 2015 – July 2018. An assessment of ideological organizational features in relation to their capacity for innovative and violent performance. **Co-Principal Investigator.**

- $70,874 contract (3 awards) from Triangle Experience Group (TEG) awarded to the University of Nebraska at Omaha for "*Advanced Collaboration Enterprise Service (ACES) Undergraduate Research Assistant*". May 2015 – Jul 2019. Assistance with the installation and maintenance, technical development, and experimental design of the ACES system. **Principal Investigator.**

- $51,500 contracts (4 awards) from Omaha Steaks awarded to the University of Nebraska at Omaha for "*Using Eye Tracking Data to Gauge User Experience with a Mobile Website*". Feb 2016 - Jun 2019. Assistance with the installation and maintenance, technical development, and experimental design of the ACES system. **Principal Investigator.**

- $200,000 grant from Nebraska Research Institute for *"Human-Machine Holographic Laboratory"*. Produce and test prototype holographic kiosks. July 2017 – June 2018. **Principal Investigator.**

- $108,692 grant from the University of Nebraska POE for *"Studying Violent Extremist Organizations Graduate Research Assistantship"*. Create a system for monitoring and capturing transient online VEO propaganda. August 2016-December 2019. **Principal Investigator.**

- $100,000 from the Department of Homeland Security (DHS) for *"Interactionist Organizational Recruiting Study: Homegrown Violent Extremism"*. Examining individual differences and media channels that influence homegrown violent extremism. October 2017-September 2018. **Co-Principal Investigator.**

- $214,984 contract from United States Strategic Command (USSTRATCOM) awarded to the University of Nebraska at Omaha for *"Intelligence Support to Deterrence Operations"*. September 2015 – Mar 2017. Summarize relevant social science research describing analytical process and cognitive method related to deterrence, as well as organizational pathways to apply the processes and methods. **Co-Principal Investigator.**

- $249,745 contract from United States Strategic Command (USSTRATCOM) awarded to the University of Nebraska at Omaha for *"Decision Support Capabilities for National Leadership"*. September 2015 – October 2016. Provide a theoretically sound and implementable framework for describing USSTRATCOM's mission for decision support to National leadership. We will have a particular focus on the sharing of knowledge across organizational boundaries, the formation of trusted relationships, problem formulation, and the operational conditions for effective collaboration. **Principal Investigator.**

- $399,988 from the Office of the Secretary of Defense (Office of the Under Secretary of Defense for Acquisition, Technology and Logistics) awarded to the University of Nebraska at Omaha for *"Pilot of Joint Capability Technology Demonstration of Advanced Collaboration Enterprise Service"*. Technical demonstration and research into group collaborative processes supporting a national level event. **Principal Investigator.**

- $69,511 from the Department of Homeland Security (DHS) National Center for Studies of Terrorism and Responses to Terrorism (START) awarded to the University of Nebraska at Omaha for *"ISIL Organizational Futures: Leadership and Cyber Profile"*. February 2015 – December 2015. Analysis of the alternative futures for ISIL as an organization by evaluating leader succession possibilities (i.e., alternative leadership decision-making style and resulting organizational structure in potential future operating environments. **Co-Principal Investigator.**

- $477,827 in contracts (4 awards) from United States Strategic Command (USSTRATCOM) awarded to the University of Nebraska at Omaha for *"Strategic Leadership Graduate Fellows Program"*. February 2014 – July 2017. The planning and implementation of a customized graduate education-level leader development program for emerging leaders at USSTRATCOM. The program provides a cohesive set of exercises, applications, experiences, and projects geared at increasing core competencies related to diverse issues of National Security such as countering CBRN, anticipating threats to National Security, innovation management, and identifying vulnerabilities in cyber infrastructure. **Co-Principal Investigator.**

- $399,500 grant from the Nebraska Research Initiative awarded to the University of Nebraska at Omaha for "*Advanced Collaboration Enterprise Service (ACES)*". Jun 2015 – Dec 2016. Evaluation of individual cognition in a spatial computing environment, group cognition in the same environment and multi-team system cognition (team of teams) for collaboration. **Principal Investigator.**

- $499,878 contract from United States Strategic Command (USSTRATCOM) awarded to the University of Nebraska at Omaha for "*Decision Support Capabilities for National Leadership*". October 2013 – September 2015. An independent assessment of data integration capabilities to support decision-making and assess risks during National Leadership decision-making. **Principal Investigator.**

- $140,385 grant from the Department of Homeland Security (DHS) Science and Technology Directorate (S&T) Cyber Security Division (CSD) for "*Critical Infrastructure Partnership Culture Study*". August 2014 – June 2015. Develop concepts that are key to the successful development, operation and sustainment of complex public-private partnerships that address critical infrastructure security & resilience. **Co-Principal Investigator.**

- $360,408 grant from the National Science Foundation awarded to the University of Nebraska at Omaha for "*Managing Sustained Online Engagement to Solve Community Problems*". September 2013 – July 2016. The focus of our proposed study is on the support of open collaboration through various managerial, technological, and process intervention strategies. **Co-Principal Investigator.**

- $199,789 contract from United States Strategic Command (USSTRATCOM) awarded to the University of Nebraska at Omaha for "*Convergence of CyberSpace and CWMD Pathways Phases I and II*". October 2013 – September 2014. Create a baseline understanding of an adversary's innovative use of cyber assets to proliferate and employ WMD materials, technology, and expertise. An analytical study that addresses not only the nexus between Non-State Actors (i.e., Violent Extremist Organizations/VEOs) in the proliferation of WMD but also consequences and response capabilities of a simultaneous WMD cyberterrorism attack on national instruments of power. **Co-Principal Investigator.**

- $184,430 grants (3 awards) from the Department of Homeland Security (DHS) National Center for Border Security and Immigration awarded to the University of Nebraska at Omaha for "*Avatar-based Kiosk for Screening*". September 2011 – December 2014. Develop an Avatar kiosk for advanced Human-Computer Interaction. **Principal Investigator.**

- $150,000 grant from the Rural Futures Institute awarded to the University of Nebraska at Omaha for "*Using Crowdlearning for Leadership Development in Rural Communities*". September 2013 – June 2015. Using online collaborative learning to improve leadership development in rural areas. **Co-Principal Investigator.**

- $87,000 contract from PKITDC awarded to the University of Nebraska at Omaha for "*Mobile Applications and Web-Based Decision Support Systems*". December 2011 – December 2012. Creation of mobile applications for telemedicine decision support and on-line decision support system for foundation resources. **Principal Investigator.**

- $89,000 contract from The University of Nebraska Medical Center and PKITDC awarded to the University of Nebraska at Omaha for "*Support development of NATO Special Operations Forces distance education material*". December 2011 – December 2012. Course development and content delivery. **Principal Investigator.**

- $62,000 grant from the National Science Foundation Center for Identification Technology Research awarded to the University of Arizona, Center for the Management of Information for "*Eye-Gaze Behavior as a Guilty Knowledge Test*". November 2010 – November 2011. Study whether pupilometery and eye gaze behavior can indicate deceptive responses. **Principal Investigator**.

- $1,000,000 grant from the Department of Homeland Security Office of Border Patrol. "*Checkpoint Metrics Proposal: Models of Effectiveness, Community Impacts, and Modeling and Simulation*". Proposed by the University of Arizona. October 2010 – September 2012. Measuring the effectiveness of border patrol checkpoints with greater accuracy and to assess the economic and social impacts of permanent checkpoints on surrounding communities. **Primary Author, Investigator**.

- $49,000 grant from the National Science Foundation Center for Identification Technology Research awarded to the University of Arizona, Center for the Management of Information for "*Human-Agent Interactions in Decision Making*". November 2009 – May 2011. Study the interaction and collaboration of humans and artificially intelligent, adaptive agents. **Principal Investigator**.

- $12.5 Million contract from the Department of Homeland Security awarded to the University of Arizona, Center for the Management of Information to create the "*National Center for Border Security and Immigration*". June 2008 – June 2014. Research technical innovations and policy solutions to secure the northern and southern borders. **Investigator.**

- $70,000 grant from the Air Force Research Lab awarded to MacAulay-Brown for "*Software Red-Team Collaboration Metrics*". Automate the metrics collection for software assessment red-teams. February 2008 – October 2009. **Principal Investigator**.

- $49,000 grant from the National Science Foundation Center for Identification Technology Research awarded to the University of Arizona, Center for the Management of Information for "*Automated Agents for Deception Detection*". November 2007 – November 2008. Create an automated interrogator to detect deception in computer-mediated, synchronous communication. **Principal Investigator**.

- $1.31 Million contract from the Air Force Information Operation Center awarded to MacAulay-Brown for the "*National Air and Space Intelligence Center*". November 2006 - November 2010. Provide intelligence support to on-going, global war on terror. **Principal Investigator**.

- $18.86 Million contract from the Air Force Information Operation Center awarded to MacAulay-Brown for the "*Combat Information Transport System Block 30*". September 2006 – September 2008. Provide 24x7 protection of Air Force Networks. **Technical Input Team Leader, Technical Section Author, Reviewer.**

- $1.48 Million contract from the Air Force Research Lab awarded to MacAulay-Brown for "*Software Protection Assessments Research Initiative*". August 2006 – August 2008. Conduct and document software application protections' strengths and weaknesses. **Principal Investigator.**

- $1.43 Million contract from the Army Anti-Tamper Office awarded to 21st Century Technologies and MacAulay-Brown for the "*Dynamic Obfuscating Virtual Environment Software Protection Research Initiative*". March 2006 – March 2008. Develop new software protection product. **Co-Principal Investigator.**

- $ .57 Million contract from the Advanced Research and Development Activity awarded to Pacific Northwest National Laboratory, MacAulay Brown, Columbia University, Telecordia Inc., and SI Government Solutions for "*Detection of Armored Malicious Logic*". March 2006 – September 2006. Determine if a zero-day malicious logic attack can be identified via static analysis. **Co-Principal Investigator.**

- $ 5.12 Million contract from the National Security Agency awarded to MacAulay-Brown for "*Research and Vulnerability Assessments of Network Devices*". November 2005 – October 2010. Conduct in-depth technical analysis of network devices. **Principal Investigator.**

- $ 4.78 Million contract from the National Security Agency awarded to MacAulay-Brown for "*Research and Vulnerability Assessments of Telecommunication Devices*". May 2005 – October 2010. Conduct in-depth technical analysis of telecommunication devices. **Principal Investigator.**

- $ 2.61 Million contract from Air Force Information Operation Center awarded to MacAulay-Brown for the "*Cyber Operations Management and Execution Tool*". August 2003 – November 2006. Develop cyber operation platform for conduction network operations. **Principal Investigator.**

SPECIAL AWARDS AND HONORS

- Distinguished Professor Designation, University of Nebraska at Omaha, 2021-2024. Awarded for exceptional contributions to research, curriculum, and student development.

- Mutual of Omaha Distinguished Chair of Information Science and Technology, 2017-2023. Awarded for excellence in research in support of the field of Information Science.

- Winner, 2018, Best Paper (one of nine out of 4,400+ submissions) at *HCI in Business, Government, and Organizations.*

- Research Leader of the Year, 2015, National Strategic Research Institute for outstanding leadership of National Defense Research.

- Winner, 2015, College of Information Science and Technology Alumni Outstanding Teaching Award. The award recognizes outstanding teaching and student-centered activities and research. It is awarded to one faculty member in the college per year.

- Winner, 2015, Best Paper, Collaboration Science Track, at HICSS.

- Winner, 2013, AIM Institute Technology Innovator of the Year. The award recognizes significant innovation in the development or application of technology in business or education.

The Innovator demonstrates a creative, outside-the-box approach that produces results and influences others to better performance.

- Winner, 2010 INFORMS Information Systems Society (ISS) Design Science Award, "Avatar-based Kiosk for Automated Interviewing and Deception Detection".

- Winner, 2010 Workshop on Information Technologies and Systems (WITS) Best Prototype Demonstration, "Avatar-based Kiosk with Interpersonal Sensors".

- One of Three Finalists, 2010 Arizona Governor's Award for Academic Innovation of the Year, "Creation of the Avatar-based Kiosk for Automated Interviewing".

- AMCIS doctorial consortium participant - Advanced Human-Agent Interaction: Embodied Intelligent Agents for Automated Interviewing

- CMI Graduate Research Fellowship – Competitively awarded based on research and teaching contributions at the University of Arizona (2009-2011)

- National Border Patrol Working Group Participant – The only external participant (non-Border Patrol participant) invited to the Border Patrol Checkpoint Activity Report working group in Washington DC. This invitation only workshop was to improve measurement of Border Patrol checkpoint effectiveness, identify ways to automate metric collection and define requirements for new decision support tools (Sep 2009)

- Science Foundation Arizona Graduate Research Fellowship – Two-year fellowship awarded via statewide competition to students with "the highest potential to drive innovation in Arizona" (2007-2009)

- Seattle Innovation Symposium Consortium Participant – Invitation-only symposium funded by the National Science Foundation concerning factors leading to successful innovation (2008)

- Highest score of all MIS Ph.D. students. Written Preliminary Core Examination (2008), University of Arizona

- Air Force Academy Graduate Fellow – Competitively awarded post graduate fellowship awarded to the top graduate from the Computer Science department from the United States Air Force Academy

- Distinguished Graduate - top 6% (1996) – United States Air Force Academy

TEACHING

Instructor of Record

Semester & Year	Course Number	Course Name	Rating
Fall 2020	ITIN 8210-001	Design Science and Theory Development	5.0/5.0
Fall 2020	EMIT 8200	Managing IT Innovation	NR/5.0
Spring 2020	ITIN 8000	Tech and Innovation State of the Art	4.5/5.0
Spring 2020	ITIN 4990-001	IT Innovation Capstone	NR/5.0
Fall 2019	ITIN 2220-001	Applied IT Innovation	4.8/5.0
Fall 2019	ITIN 8210-001	Design Science and Theory Development	5.0/5.0
Spring 2019	ITIN 4990-001	IT Innovation Capstone	NR/5.0
Fall 2018	ITIN 1110-001	Introduction to IT Innovation	4.9/5.0
Fall 2018	ITIN 8210-001	Design Science and Theory Development	NR/5.0
Fall 2018	EMIT 8200	Managing IT Innovation	NR/5.0
Spring 2018	ITIN 4990-001	IT Innovation Capstone	5.0/5.0
Spring 2018	ITIN 2990-001	IT Innovation Symposium	4.8/5.0
Fall 2017	ITIN 1110-001	Introduction to IT Innovation	4.9/5.0
Fall 2017	ITIN 8006	Design and Theory	4.9/5.0
Spring 2017	ITIN 2220-001	Applied IT Innovation	5.0/5.0
Spring 2017	ITIN 4990-001	IT Innovation Capstone	4.7/5.0
Fall 2016	ITIN 2990-001	IT Innovation Symposium	4.7/5.0
Fall 2016	ITIN 8006	Design and Theory	4.8/5.0
Spring 2016	ITIN 2220-001	Applied IT Innovation	5.0/5.0
Spring 2016	ITIN 4990-001	IT Innovation Capstone	5.0/5.0
Fall 2015	ISQA 4880-001	Modeling & System Simulation	5.0/5.0
Fall 2015	ITIN 1110-001	Introduction to IT Innovation	5.0/5.0
Spring 2015	ITIN 2220-001	Applied IT Innovation	4.9/5.0
Spring 2015	ITIN 4990-001	IT Innovation Capstone	4.0/5.0
Fall 2014	ISQA 4880-001	Modeling & System Simulation	5.0/5.0
Fall 2014	ITIN 1110-001	Introduction to IT Innovation	4.9/5.0
Spring 2014	ITIN 4990-001	IT Innovation Capstone	4.8/5.0
Spring 2014	ITIN 2220-001	Applied IT Innovation	4.8/5.0
Fall 2013	ISQA 4880-001	Modeling & System Simulation	4.9/5.0
Fall 2013	ITIN 1110-001	Introduction to IT Innovation	4.9/5.0
Spring 2013	ITIN 4990-001	IT Innovation Capstone	5.0/5.0
Spring 2013	ITIN 2220-001	Applied IT Innovation	4.8/5.0
Fall 2012	ITIN 1110-001	Introduction to IT Innovation	5.0/5.0
Spring 2012	ITIN 4990-001	IT Innovation Capstone	5.0/5.0
Spring 2012	ITIN 1110-001	Introduction to IT Innovation	4.9/5.0
Fall 2011	ISQA 4000-001	Introduction to IT Innovation	5.0/5.0
Winter 2010	MIS 373	Operations Management (Univ of Arizona)	4.9/5.0

New Courses Created

ITIN 1110: Introduction to IT Innovation
This course introduces students to tools, techniques, and methods for generating innovative information technology ideas and solutions. It teaches them to think about future possibilities and to practice critically evaluating proposed innovations and ideas. The goal of the course is to increase students' ability to creatively solve challenging problems in new ways, using information technology. This class is inherently interdisciplinary as IT now touches every aspect of modern academic pursuits.

ITIN 2220: Applied IT Innovation
The course extends the concepts learned in the Introduction to IT Innovation course. It moves past idea generation and focuses on market dynamics, identifying and gathering resources, innovation implementation, sustainable innovation models and monetizing innovations. The goal is for students to take their original ideas from concept to initial implementation with thoughts towards commercialization. Upon completing the course, students will have created at least a rudimentary implementation of an original idea and have a defensible plan for how the idea can be monetized.

ITIN 3330: Mobile Software Design and Development
This course covers how to develop applications for mobile platforms and devices with smaller form factors. The history of mobile computing is reviewed and principles of good mobile application design is introduced. The course particularly focuses on innovation using mobile devices and students are expected to develop an original concept and create a prototype implementation of their unique idea as a mobile application. The proposed solutions must be novel and meet a real-world market need. This course is hands-on and examines the development models for current mobile operating systems.

ITIN 4990: Information Technology Innovation Capstone Project Part II
This course serves as Part 2 of the capstone project for the Information Technology Innovation program. Following the designs and business plan developed in Part I: ITIN 4980, the students create a prototype of an IT product or service as well as refine and implement the required business aspects involved in launching their project commercially. This effort is coordinated under the guidance of an advisory committee.

ITIN 8210: Design Science and Theory Development
The purpose of this course is to help students understand theory, theoretical contributions, and design science. We explore design science as a research methodology and Information Technology design theories. Ultimately, students create their own new studies.

ITIN 8950: Information Technology Innovation Capstone Project Part II
This course serves as Part 2 of the capstone project for the Information Technology Innovation program. Following the designs and business plan developed in Part I: ITIN 8940, the students create a prototype of an IT product or service as well as refine and implement the required business aspects involved in launching their project commercially. This effort is coordinated under the guidance of an advisory committee.

EMIT 8200: Managing Information Technology Innovation
This course introduces Executive Master of Science in Information Technology (EMIT) students to the concepts, applications and tools for facilitating IT Innovation, Creativity, Entrepreneurship and Risk Taking.

Courses Updated / Substantial Modifications
ISQA 4880: Systems Simulation and Modeling
The ability to make good decisions is key to individual and organizational success and studying, understanding and improving of decisions is crucial to business success. With the ever-increasing availability of information and information exposure, the course improves students' decision-making process and ability. Decisions are defined as a commitment to a course of action in view of achieving satisfactory results and can be complex, involving arduous processes and large amounts of information. The course objective is to improve the utility or desirable consequences of decisions, both perceived and actual, and to give students processes and tools to model decisions.

ITIN 8100: Intermedia
This course explores concepts of innovative genius, decision-making for complex problems, and intentional creation. The goal is to help students apply principles to create and establish a mindset and habits of innovation. Students will explore curiosity, failure, the connection between art and science, systems thinking, and ambiguity. Students will work through problem formulation, generating objectives and alternatives, uncertainty, and risk, and use tools to structure thinking. Students will learn practical tools for effective decision-making processes. Finally, students will study motivation and the intentional life of creation and innovation.

Other Activities
IT Innovation Minor
I worked on the committee and was the primary author of the IT Innovation minor proposal. The minor consists of 12 undergraduate hours and 9 elective hours. The minor has been approved and is currently available. We estimate there will be approximately 10-15 students each year that will obtain a Minor offered in IT Innovation. The objective of the ITIN Minor is to provide students with a substantive qualification in information technology to augment their respective major and allow them to be innovative as to the application of IT to their learning and career choices. This minor aligns with the program goal of being student focused. The students are able to better tailor their academic program to their individual needs. The IT Innovation minor allows a student to maintain the major of his or her passion while acquiring the IT skills that the future requires.

IT Innovation Master of Science
Led the development and approval of the Master of Science in IT Innovation. The focus of the degree is the interdisciplinary practice of conceptualizing, designing, prototyping, and fielding an IT-based product or service. It concentrates both on the technological and entrepreneurial aspects of IT products. IT Innovation brings together aspects of Computer Science and Management

Information Systems with other disciplines that inform IT design and application such as health care, business, psychology, art, or music.

Dissertation and Thesis Committees

Semester & Year	Student's Name	Dissertation/Thesis Title or Topic Area
2019 – 2023	Braun, Clara	Interventions for Incarcerated Extremists
2018 – 2021	D'Amato, Alexis	Exploring Influential Mindsets
2018 – 2021	Ovici, Jessica	Resistance to Emerging Technology: How Human Trust Relates to Technology Anxiety
2018 – 2020	McCoy, Connor	HoloPong, New Dimensions in 3D Gaming
2018 – 2020	Mazgaj, Michael	Social Presence, You're My Only Hope for Hologram Telecommunication
2018 – 2020	Parker, Britnee	Influence that Kills: An Examination of the Interaction Between Extremist Leaders' Influence Type and Lethality
2018 – 2020	Breen, Kasi	Viewing Violence: An Exploration of Emotional Reactions to Viewing Terrorist Imagery
2016 – 2020	Logan, Michael	From Simple to Sophisticated: The Organization of Terrorist Groups
2015 – 2019	Elson, Joel	Towards a Theory of Early Trust in Intelligent Systems: Exploring Psychological Factors and Cognitive Processes as Predictors of Trust
2017 – 2019	Braun, Clara	Today's Students. Tomorrow's Terrorists: An Examination of Education and Criminal Participation
2017 – 2019	Sproles, Laramie	Malevolent Creativity and Far-Left Violent Extremist Attacks Against Targets in the Agricultural Industry (Thesis)
2014 – 2018	Kocsis, Dave	Ethical considerations for crowdsourcing participants (Dissertation)
2016 – 2017	Fuller, Julia	The Relationship Between VEO Branding and VEO Performance (Thesis)
2016 – 2016	Krell, Matthias	The relationship between the Acceptance of Mobile Payment Services and Consumer Impulsiveness (Thesis)
2014 – 2016	Alothaim, Abdulrahman	Engaging and Sustaining On-line Crowds (Dissertation)
2012 – 2016	Harms, Mackenzie	The Effects of Problem Construction and Information Search on Creative Problem Solving (Thesis / Dissertation)
2013 – 2015	Zongrone, Bianca	Decision-making with comprehensiveness and different communication modalities (Thesis)
2013 – 2015	Nguyen, Cuong	Understanding User Engagement in the Open Collaboration Model of Crowdsourcing (Dissertation)

2012 – 2014	McDonald, Daniel	HCU Design Principles for Technology Systems' Inputs and Outputs for Children with Hemiparesis (Thesis)
2012 – 2013	Read, Aaron	Improving Requirements Generation Thoroughness in User-Centered Workshops: The Role of Prompting and Shared User Stories (Dissertation)
2012 – 2013	Aljafari, Ruba	An Empirical Investigation of Antecedents to Engagement with ICT Enabled Knowledge Transfer (Thesis)
2012	Fuller, Kyle	UNO Mobile Student Assistant (Thesis)

Service

- ADROCA Committee (2020-2022)

- IS&T Dean Search Committee, Committee Member (2020 – 2021)

- IT Innovation Faculty Search Committee, Chair (2020 – 2021)

- IT Innovation Faculty Search Committee, Committee Member (2020 – 2021)

- NCITE, Director of Operations Search Committee, Committee Co-Chair (2020)

- NCITE, Director of Communications Search Committee, Committee Co-Chair (2020)

- NCITE, Sub-Contract Manager Search Committee, Committee Co-Chair (2020)

- NCITE, Office Manager Search Committee, Committee Co-Chair (2020)

- Doctoral Program Committee, Committee Member, (2016 - 2019)

- College Academic Committee, Committee Member, (2016 - 2018)

- Created and executed the IT innovation Cup, a competition for local high schools

  - Over $100,000 has been raised for this event
  - Competition has completed 6 years. Over 50 teams have participated in the competition.

- Faculty Sponsor for the First National Bank Reverse Pitch Competition (2017-2019)

- Department Reappointment, Promotion, and Tenure Committee (2015 – Present)

- IT Innovation Undergraduate Program Committee, Member, (2011 - Present)

- IT Innovation Undergraduate Curriculum Committee, Member, (2011 - Present)

- Dean's Advisory Committee, Committee Member, (2016 - 2017)

- IT Innovation Faculty Search Committee, Chair (2015 – 2016)

- Department Graduate Program Committee, Member (2015 – 2017)

- Dean's Advisory committee, Member (2014-2015)

- ISQA Faculty Search Committee, Member (2014)

- IT Innovative Collaborative Student Group, Faculty Advisor, (2012 – 2014, 2017)

- College Strategic Recruiting & Retention Committee, Member, (2012 - 2014)

Professional Service

- 2020- Present, Track-Chair, for the "Human Computer / Robot Interaction" Track at the International Conference for Information Systems

- 2017-Present, Editorial Board Member for the journal *Dynamics of Asymmetric Conflict*

- 2017-Present, Editorial Board Member for the *International Journal of E-Politics*

- 2018-Present, HICSS Doctoral Consortium Mentor

- 2017-Present, Mini-track chair for the "Machines as Teammates" track for the Hawaii International Conference on System Sciences.

- 2012-Present, Mini-track chair for the "Design and Development of Collaboration Technologies" track for the Hawaii International Conference on System Sciences.

- 2015, Associate Editor for the Design Science track for the International Conference on Information Systems (the primary Information Systems annual academic conference).

- Performed 40+ ad hoc peer reviews for *Journal of Management Information Systems (JMIS)*, *Transactions on Affecting Computing, Decision Support Systems (DSS), Knowledge and Information Systems (KAIS), IEEE Intelligent Systems, Group Decision and Negotiation (GDN), Hawai'i International Conference on System Sciences (HICSS), Computer Supported Cooperative Work (CSCW), Pacific Asia Conference on Information Systems (PACIS)* and others.

- Conference volunteer for the *International Conference on Information Systems (ICIS) 2010*

PROFESSIONAL EXPERIENCE

MacAulay Brown, Inc (MacB). – Senior Consultant (Jul 2007–May 2013)
- Technical consultant for all MacAulay-Brown Internal Research & Development projects
- Provide support for National Intelligence community technical analysis tasks
- Create reverse engineering curriculum for MacAulay-Brown new hires
- Develop a red-team assessment framework for the Air Force Research Lab AT-SPI office
- Irregular part-time employee

Science Foundation Arizona. Research Fellow (Jul 2007 – Jun 2009)
- Research and create artificially-intelligent, adaptive agents:
  - Human-agent interaction in security tasks
  - Human-agent collaboration in decision making
- Automated deception detection
  - Automated interrogation / interviewing
  - Automated sensor monitoring / data mining of human interactions

MacAulay Brown, Inc. (MacB) – Program Manager, Special Programs (Aug 2004–Jul 2007)

- Directed eight contracts that supported commercial and federal customers. Revenues grew from $1.49 M in 2004 to $7.13 M in 2007.
- Direct-line supervisor of 27 people. Reported to Vice-President.
- Headed all MacAulay Brown Internal Research and Development projects. Set and executed research budget (five proprietary efforts). Developed technical strategic plans for MacAulay-Brown. Author of multiple proposals and grants.
- Provided planning, consultation and advisory services on system development to all MacAulay-Brown projects.

MacAulay Brown, Inc. (MacB) – Project Manager, COMET Project (Aug 2003–Aug 2004)
- Led a $2.6 Million, cutting-edge, network-security, software-development effort for the Air Force. Technical and business leader of the division's flagship project.
- Principal architect of the LINUX-based network security solution. Served as the Network Security Subject Matter Expert for MacAulay-Brown Central Operations.

US Air Force – Project Manager, Enterprise Vulnerability Assessment (Jun 2001–Aug 2003)
- Led a $1.7 Million, Air Force-wide software development effort and acted as the business and technical manager for the enterprise-wide, java-based system.

US Air Force – Program Integrator, Lockheed Martin Missiles & Space (May 1999–Jun 2001)
- Coordinated an 80-person, multi-functional team in 9 cities that managed a $3.9 Billion contract.

US Air Force – Manager of Information Technology, Lockheed Martin (Dec 1997–May 1999)
- Led a 6-person team responsible for managing and defending an operational network and multiple on-line databases that supported 110 users housed in 9 buildings and 3 cities.

US Air Force – Research Fellow, Texas A&M University (Jun 1996–Dec 1997)
- Conducted research in network security, distributed computing, and cryptography.

ADDITIONAL SKILLS

- Fluent in Russian – Lived in the former Soviet Union for 2 years (1992-1994)

BIOGRAPHICAL SKETCH

Gaylene Armstrong, Ph.D.
University of Nebraska Omaha, (b)(6)
(b)(6)
NCITE CoE Role: Theme Lead for Theme 3: Terrorism Prevention

A. PROFESSIONAL PREPARATION

University of Maryland, College Park	Criminology and Criminal Justice	MA, 1998
University of Maryland, College Park	Criminology and Criminal Justice	PhD, 2000
University of Manitoba, Canada	Psychology (with Honors)	B.A., 1995

B. APPOINTMENTS

1. Professor and Director, School of Criminology and Criminal Justice, University of Nebraska at Omaha, Omaha, NE. (2016-present)
2. Professor and Chair, Founding Department of Criminal Justice and Criminology, Sam Houston State University, Huntsville, TX. (2013-2016)
3. Associate Professor, College of Criminal Justice, Sam Houston State University, Huntsville, TX. (2007-2013)
4. Assistant Professor, Southern Illinois University, Carbondale, IL. (2005-2007)
5. Assistant Professor, Arizona State University, Phoenix, AZ. (2000-2005)

C. PRODUCTS

Publications Most Closely Related to Proposal (evaluation research within a criminal justice setting):

Forthcoming   Armstrong, G., Muftic, L., & Bouffard, L. Factors influencing law enforcement responses to child to parent violence. Accepted. *Journal of Interpersonal Violence.* https://doi.org/10.1177/0886260518794510

2019   Armstrong, G., Fox-Talbot, K. & Lane, J. Fear of victimization among incarcerated gang and non-gang youths: Examining the effects of institutional "neighborhood" characteristics. *Youth and Society, 51,* 417-439.

2016   Armstrong, G., Atkin-Plunk, C., & Gartner, N. Perceptions of motivational interviewing: Validation of the Client Evaluation of Motivational Interviewing scale with probation clients. *Criminal Justice and Behavior, 43,* 1095-1106.

2012   Armstrong, G.S. Factors to consider for optimal span of control in community supervision evidence based practice environments. *Criminal Justice Policy Review, 23*(4), 427-446.

2011   Armstrong, G. S., & Freeman, B. Examining GPS monitoring alerts triggered by sex offenders: The divergence of legislative goals and practical application in community corrections. *Journal of Criminal Justice, 39*, 175-182.

Other Significant Publications:

2018   Armstrong, G.S., Cain, C., Wylie, L., Muftic, L. M., & Bouffard, L. Risk factor profile of youth incarcerated for child to parent violence: A nationally representative sample. *Journal of Criminal Justice, 58*, 1-9.

2018   Atkin-Plunk, C., & Armstrong, G. The mediating influence of preincarceration social bonds on prison visitation and recidivism. Accepted. *Criminal Justice and Behavior, 45*, 1507-1526.

2016   Bouffard, L., Armstrong, G., & Muftic, L. Impact of Maternal Incarceration on the Criminal Justice System Involvement of Adult Offspring in a Nationally Representative Sample. *Journal of Research in Crime and Delinquency*, 53, 93-111. DOI: 10.1177/0022427815593988.

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D. SYNERGISTIC ACTIVITIES

- Principal Investigator or Evaluation lead on grants and contracts totaling $3,366,465. Examples include:

  2019   PRINCIPAL INVESTIGATOR (with G. Ligon), *Risk Assessment of Home Grown Violent Extremists on Federal Supervision.* Awarded from the U.S. Department of Homeland Security via Arizona State University Center of Excellence on Terrorism, $280,000. (07/01/2018 - 06/30/2020). $280,000.

  2019   PRINCIPAL INVESTIGATOR (with S. Clinkinbeard, J. Nix), Evaluation of Omaha Police Athletic for Community Engagement. Awarded from the City of Omaha, NE, $46,487.

  2019   Co-PRINCIPAL INVESTIGATOR (with J. Harder), Drug Overdose Prevention Program: Drug-Use Behaviors. Awarded from the Nebraska Department of Health and Human Services, $70,932.

  2019   CONSULTING EVALUATOR and GRANT CO-AUTHOR, *Justice and Mental Health Collaboration Program: Category 3 – Implementation and Expansion* for the *City of Omaha, Heartland Crisis Intervention Team Program.* Awarded to the City of Omaha from the Bureau of Justice Assistance, $690,240.

- Past President (2018-2019), President (2015-2017), and Vice-Presider (2013-2015), Association of Doctoral Programs in Criminology and Criminal Justice, 2018-2019.
- Current Editorial Board Service: Justice Evaluation Journal (2018-present), Journal of Criminal Justice (2010-present), Criminal Justice Policy Review, (2017-present)

E. STUDENT SUPERVISION (Graduate Dissertation and Theses in Criminology and Criminal Justice)

- Sara Toto (PhD., in progress) University of Nebraska Omaha, Committee Member
- Michael Logan (PhD., in progress) University of Nebraska Omaha, Committee Member
- Ashely Terrell (Ph.D., 2017) University of Louisville, External Committee Member
- Cassandra Atkin-Plunk (Ph.D., 2014) Sam Houston State University, Chair
- Clara Braun (M.A., 2019) University of Nebraska Omaha, Committee Member
- Liseal Hoffman (M.A., 2017) University of Nebraska at Omaha, Committee Member
- Gentry Shaffer (M.A., 2013) Sam Houston State University, Chair
- Cassandra Atkin (M.A., 2010) Sam Houston State University, Chair
- Molly Smith (M.A., 2012) Sam Houston State University, Chair
- Sadie Doll (M.A., 2011) Sam Houston State University, Chair

Ryan M. Schuetzler, Ph.D.

Department of Information Systems
Marriott School of Management
Brigham Young University
(b)(6)

(b)(6)

Current Position

Assistant Professor
Department of Information Systems
Marriott School of Management
Brigham Young University

Research Interests

My research centers on users' adaptation and use of novel communication technology. My primary research focuses on human interaction with embodied conversational agents and chat bots, and the influence of those chat bots on users' feelings and behavior toward those systems. I also study users' adaptation to intelligent systems designed to detect deception. I am interested to learn how people adapt their behavior, either consciously or unconsciously, as they interact with novel systems.

Areas of Specialization

Conversational Agents ● Human-Computer Interaction ● Privacy ● Deception

Previous Appointments

2015-2020	University of Nebraska at Omaha, Assistant Professor

Education

2015	Ph.D. in Management Information Systems, University of Arizona
2010	MS in Information Systems Management, Brigham Young University
2010	BS in Information Systems, Brigham Young University

Grants, Honors & Awards

2019-2020	Principal Investigator, *The Role of Expectations in Shaping Impressions of Artificial Intelligence*, University Committee on Research and Creative Activity, University of Nebraska at Omaha, $5,000.

2016-2019	Co-investigator, *Optimizing EHR Usability for Cardiac Care*, Agency for Healthcare Research and Quality, $571,835.
2015–2018	Principal investigator, *Dynamic Interviewing Agents*, Nebraska Research Initiative, $200,000.
2015	Co-investigator, *Decision Support Capabilities for National Leadership*, National Strategic Research Institute, $249,875.
2011–2014	$205,000 in research grants, Center for Identification Technology Research
2011	Science Foundation Arizona Graduate Research Fellow

Awards

2020	University of Nebraska at Omaha Alumni Outstanding Teaching Award
	Outstanding officer award as President of the Midwest Chapter of the Association for Information Systems
2018	Best paper for "Next-Generation Accounting Interviewing: A Comparison of Human and Embodied Conversational Agents (ECAs) as Interviewers" at American Accounting Association Midyear Meeting
	Best paper for "Learning by Teaching through Collaborative Tutorial Creation: Experience using GitHub and AsciiDoc" at EDSIG Conference on Information Systems & Computing Education
	Outstanding officer award as Secretary of the Midwest Chapter of the Association for Information Systems

Publications & Talks

Journal articles

2021	Grimes, G. M., Schuetzler, R. M., & Giboney, J.S. (2021). Mental Models and Expectation Violations in Conversational AI Interactions. *Decision Support Systems, 144.* [DOI]
	Schuetzler, R. M., Grimes, G. M., Giboney, J. S., & Rosser, H. K. (2021). Deciding Whether and How to Deploy Chatbots. *MIS Quarterly Executive, 20*(1), p. 4.
2020	Schuetzler, R. M., Grimes, G. M., & Giboney, J. S. (2020). The Impact of Chatbot Conversational Skill on Engagement and Perceived Humanness. *Journal of Management Information Systems, 37*(3), pp. 875-900. [DOI]
	Pickard, M., Schuetzler, R. M., Valacich, J. S., & Wood, D. A. (2020). Innovative Accounting Interviewing: A Comparison of Real and Virtual Accounting Interviewers. *The Accounting Review, 95*(6), pp. 339–366. [DOI]
	Young, J. A., Biros, D. P., Schuetzler, R. M., Smith, T. J., Stephens, P. R., Syler, R. A., & Zheng, S. H. (2020) When Programs Collide: A Panel Report on the Competing Interests of Analytics and Security. *Communications of the Association for Information Systems, 46.* [DOI]

Clarke, M. A., Schuetzler, R. M., Windle, J. R., Pachunka, E., & Fruhling, F. (2020). Usability and Cognitive Load in the Design of a Personal Health Record. *Health Policy and Technology, 9*(2), pp. 218–224. [DOI]

2019   Schuetzler, R. M., Grimes, G. M., & Giboney, J. S. (2019). The Effect of Conversational Agent Skill on User Behavior during Deception. *Computers in Human Behavior, 97*, pp. 250–259. [DOI]

Marquardson, J. & Schuetzler, R. M. (2019). Teaching Tip: Learning by Teaching through Collaborative Tutorial Creation: Experience using GitHub and AsciiDoc. *Journal of Information Systems Education, 30*(1), pp. 10–18.

2018   Schuetzler, R. M., Giboney, J. S., Grimes, G. M., & Nunamaker, J. F. (2018). The Influence of Conversational Agent Embodiment and Conversational Relevance on Socially Desirable Responding. *Decision Support Systems, 114*, pp. 94–102. [DOI]

2017   Payne, K., Keith, M. J., Schuetzler, R. M., & Giboney, J. S. (2017) Examining the Learning Effects of Live Streaming Video Game Instruction over Twitch. *Computers in Human Behavior, 77*, pp. 95–109. [DOI]

Dunbar, N. E., Jensen, M. L., Miller, C. H., ..., & Schuetzler, R. M. (2017) Mitigation of Cognitive Bias with a Serious Game: Two Experiments Testing Feedback Timing and Source, *International Journal of Game-based Learning, 7*(4), pp. 86–100. [DOI]

2016   Proudfoot, J. G., Boyle, R., & Schuetzler, R. M. (2016) Man vs. machine: Investigating the effects of adversarial system use on end-user behavior in automated deception detection interviews. *Decision Support Systems, 85*, pp. 23–33. [DOI]

2015   Twyman, N. T., Proudfoot, J. G., Schuetzler, R., Elkins, A. C., & Derrick, D. C. (2015). Robustness of multiple indicators in controlled, automated deception detection interviews. *Journal of Management Information Systems, 32*(4), pp. 215–245. [DOI]

Lowry, P. B., Schuetzler, R. M., Giboney, J. S., & Gregory, T. (2015) Is trust always better than distrust? The potential value of distrust in newer virtual teams engaged in short-term decision making. *Group Decision and Negotiation, 24*(4), pp. 723–753. [DOI]

Burgoon, J. K., Schuetzler, R., & Wilson, D. W. (2015) Kinesic patterning in deceptive and truthful interactions. *Journal of Nonverbal Behavior, 39*(1), pp. 1–24. [DOI]

2014   Burgoon, J. K., Proudfoot, J. G., Schuetzler, R., & Wilson, D. W. (2014) Patterns of nonverbal behavior associated with truth and deception: Illustrations from three experiments. *Journal of Nonverbal Behavior, 38*(3), pp. 325–354. [DOI]

2011   Barlow, J. B., Giboney, J. S., Keith, M. J., Wilson, D. W., Schuetzler, R., Lowry, P. B., & Vance, A. (2011). Overview and guidance on agile development in large organizations. *Communications of the Association for Information Systems, 29*, pp. 25–44. [DOI]

BOOK CHAPTERS

2016   Burgoon, J. K., Wilson, D., Hass, M., & Schuetzler, R. (2016). Interactive Deception in Group Decision-Making: New Insights from Communication Pattern Analysis. In S. M. Magnusson, K. J. Burgoon, & M. Casarrubea (Eds.), Discovering Hidden Temporal Patterns in Behavior and In-

teraction: T-Pattern Detection and Analysis with THEME™ (pp. 37–62). New York, NY: Springer New York. Retrieved from [DOI]

CONFERENCE PROCEEDINGS

2019   Pachunka, E., Windle, J., Schuetzler, R., & Fruhling, A. (2019). Natural-Setting PHR Usability Evaluation using the NASA TLX to Measure Cognitive Load of Patients. *Hawaii International Conference on System Sciences*. Grand Wailea, Maui, HI, January 8–11. [DOI]

Schuetzler, R. M., Morrison, B. B., & Hayes, J. (2019). Digital Excellence: A Missing Link. *Americas Conference on Information Systems*, Cancún, Mexico, August 15–17.

Schuetzler, R. M., Clarke, M. A., Windle, J. R., Pachunka, E., & Fruhling, A. L. (2019). Understanding System-induced Cognitive Load with Eye Tracking. *Americas Conference on Information Systems*, Cancún, Mexico, August 15–17.

2018   Pickard, M. D., Schuetzler, R. M., Valacich, J. S., & Wood, D. (2018). Next-Generation Accounting Interviewing: A Comparison of Human and Embodied Conversational Agents (ECAs) as Interviewers. *American Accounting Association Midyear Meeting*, Newport Beach, CA, January 18–20.

Marquardson, J. & Schuetzler, R. M. (2018). Learning by Teaching through Collaborative Tutorial Creation: Experience using GitHub and AsciiDoc. *EDSIG Conference on Information Systems & Computing Education*, Norfolk, VA, October 31–November 3.

Schuetzler, R. M., Grimes, G. M., & Giboney, J. S. (2018). An Investigation of Conversational Agent Relevance, Presence, and Engagement *Americas Conference on Information Systems*, New Orleans, LA, August 15–18.

Fruhling, A. L., Ramachandran, D., Bernard, T., Schuetzler, R. M., & Windle, J. (2018) Patient Preferences for Authentication and Security: A Comparison Study of Younger and Older Patients. *ACM SIGMIS Conference on Computers and People Research*, Buffalo, NY, June 18–20. [DOI]

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2016   Schuetzler, R. M., Grimes, G. M., Elkins, A. C., Burgoon, J. K., & Valacich, J. S. (2016) Talking and typing: A comparison of vocalic and keystroke dynamic features for deception detection. *Hawaii International Conference on System Sciences*. Koloa, HI, January 5–8.

2015   Wilson, D. W., Schuetzler, R. M., Dorn, B., Proudfoot, J. G., & Valacich, J. S. (2015) When disclosure is involuntary: Empowering users with control to reduce concerns. *International Conference on Information Systems*. Fort Worth, Texas, December 13–16.

2014   Schuetzler, R. M., Giboney, J. S., Grimes, G. M., & Buckman, J. (2014) Facilitating natural conversational agent interactions: Lessons from a deception experiment. *International Conference on Information Systems*. Auckland, New Zealand, December 12-16.

Dunbar, N. E., Jensen, M. L., Miller, C. H., Bessarabova, E., Straub, S., ... & Schuetzler, R. (2014) Mitigating cognitive bias through the use of serious games: Effects of feedback. *9th International*

Conference on Persuasive Technology, Padova, Italy, May 21-23. [DOI]

2013
Twyman, N. W., Schuetzler, R., Proudfoot, J. G., & Elkins, A. (2013). A systems approach to countermeasures in credibility assessment interviews. *International Conference on Information Systems (ICIS)*, Milan, Italy, December 15–18.

Schuetzler, R. & Wilson, D. W. (2013) Real-time embodied agent adaptation. *Hawaii International Conference on System Sciences.*

2012
Schuetzler, R. (2012) Countermeasures and eye tracking deception detection. *Hawaii International Conference on System Sciences.*

Nunamaker, J. F., Jr., Burgoon, J. K., Twyman, N. W., Proudfoot, J. G., Schuetzler, R., & Giboney, J. S. (2012) Establishing a foundation for human credibility screening. *2012 IEEE International Conference on Intelligence and Security Informatics (ISI)*. June 11–14.

Burgoon, J. K., Wilson, D. W., Schuetzler, R. & Hass, M. (2012) Interactive deception in group decision-making. *National Communication Association Convention.*

Burgoon, J. K., Schuetzler, R., & Wilson, D. W. (2012) Uncovering hidden patterning in interpersonal communication: Illustration with deceptive and truthful interactions. *National Communication Association Convention.*

2011
Proudfoot, J. G., Giboney, J. S., Schuetzler, R. & Durcikova, A. (2011). Trends in phishing attacks: Suggestions for future research. *Americas Conference on Information Systems.*

2010
Lowry, P. B., Giboney, J. S., Schuetzler, R., Richardson, J., Gregory, T., Romney, J., & Anderson, B. (2010). The value of distrust in computer-based decision-making groups. In *Proceedings of the 43rd Hawaii International Conference on System Sciences.*

INVITED PRESENTATIONS AND PANELS

2019
When Programs Collide: Competing Interests of Analytics and Security. Panel at the annual conference of the Midwest Chapter of the AIS. Panel report forthcoming at *Communications of the Association for Information Systems.*

Extending Engagement with Discussion Boards. Presentation at the UNO STEM TRAIL Center Pedagogy Workshop.

Fostering a Community of Inquiry with Discourse(.org). Presentation at the 2nd annual UNO Digital Learning Showcase.

2018
Developing Instructor Presence Online. Presentation at the 1st annual UNO Digital Learning Showcase.

Extending the Conversation about Teaching with Technology. Panel at the University of Nebraska Technology and Pedagogy Symposium.

2016
Chatbot for Enhancing Voluntary Information Disclosure. Webinar for the Center for Identification Technology Research, an NSF Industry/University Collaborative Research Center.

2015   *Lie to Me: Chatterbot Style.* Webinar for the Center for Identification Technology Research, an NSF Industry/University Collaborative Research Center.

2014   *Identifying and Reducing Patient Drug Seeking.* Panel for first-year medical students at University of Arizona College of Medicine.

A Mobile Interviewing Agent for Deception Detection. Webinar for the Center for Identification Technology Research, an NSF Industry/University Collaborative Research Center.

2012-2014   *Deception and Automated Credibility Assessment.* Fort Huachuca Military Intelligence Captain's Career course.

Teaching

TEACHING NARRATIVE

The primary courses I have taught are data communications/IT infrastructure and computer security management. I have successfully adapted both courses for online learning, and continue to teach in both modes. My courses involve a variety of activities, including open access hands-on lab activities I have created to allow students to see the concepts they learn about in action.

COURSES TAUGHT

University of Nebraska at Omaha

2017–present   CYBR/ISQA 8546 – Computer Security Management (Overall rating: 4.42/5.0)

2015–present   ISQA 3400 – Business Data Communications (Overall rating: 4.55/5.0)

2016–present   ISQA 8310 – Data Communications (Overall rating: 4.65/5.0)

2016–2019   ISQA 4380 – Distributed Systems and Technologies (Overall rating: 4.48/5.0)

University of Arizona

2013-2015   MIS 307 – Introduction to Business Data Communications (Effectiveness: 4.6/5.0)

2012   MIS 111 – Introduction to Management Information Systems (Effectiveness: 4.9/5.0)

COURSE ACHIEVEMENTS

- Transitioned IT Infrastructure, Computer Security Management, and Distributed Technologies classes to online learning
- Fully updated former data communications course to IT Infrastructure, including new content introducing operating systems and cloud computing.
- Created virtual labs for IT Infrastructure to allow students to gain hands-on experience with data communications (Creative Commons licensed, and available at https://github.com/rschuetzler/datacom-labs)
- Created a discussion board using the open source Discourse program to provide a more flexible and dynamic conversation platform for student-student interactions

- Converted IT Infrastructure course to use Open Educational Resources (OER) to improve flexibility and reduce costs for students
- Online course featured in the 2020 UNO Chancellor's strategic planning forum

SELECT STUDENT COMMENTS

> I appreciated your passion and it encouraged me to work harder and study better for this course...I fully digested the information you presented to us. After completing this course, I am seriously considering spending more time in the areas you taught us because I have found a curiosity for the area I did not imagine before.

> I really enjoy class. The way the material has been amplified with your own knowledge and the way the slides are structured really help me to pay attention, take notes, and tell myself "Ooo, that's something I want to put down here. That's important."

> Great teacher, made everything very easy to understand. Made class interesting and fun. Kept everyone engaged in learning.

> I really enjoyed that Ryan truly cared if his students understood what was going on and comprehended the material.

Service

CONFERENCE AND AIS ACTIVITIES

- Mini-track chair (AMCIS 2018–2020): Cognitive, Affective, and Conversational HCI
- Mini-track co-chair (HICSS 2019–2020): Design and Development of Collaboration Technologies
- President of the Midwest chapter of the Association for Information Systems (2019–2020)
- Secretary for Midwest chapter of the Association for Information Systems (2016–2018)
- Conference chair: Big XII+ Management Information Systems Symposium (2017, Omaha)

REVIEWING

Grants

- Dutch Research Council (2020)

Journals

- Journal of the Midwest Association for Information Systems
- Computers in Human Behavior
- Journal of the Association for Information Systems
- MIS Quarterly
- ACM Transactions on Management Information Systems
- Group Decision & Negotiation
- Journal of Management Information Systems
- Journal of Nonverbal Behavior
- IEEE, SMC-A

Conferences

- EDSIG Conference on Information Systems & Computing Education
- International Conference on Information Systems
- Hawaii International Conference on System Sciences
- Americas Conference on Information Systems
- AIS Special Interest Group on Human-Computer Interaction (SIGHCI)

DEPARTMENT/UNIVERSITY

- ISQA Department Undergraduate Program Committee Chair (2017–present)
- IS&T Doctoral Program Committee Member (2019–present)
- IS&T Faculty Liaison for Instructional Design (2017–2019)
- IS&T Advisory Committee Member (2018–2019)
- Biomedical Informatics Doctoral Program Committee Member (2018–2019)
- ISQA Department Undergraduate Program Committee Member (2016–2017)
- UNO Success Academy Faculty Presenter (2016–2017)

COMMUNITY

- Omaha Python User Group: Arranged campus hosting for monthly meetings and presented on conversational agent research (2018)

Technical and Other Skills

- Programming languages: Python, R, Node.js
- Web application development with Python and Django
- TCP/IP networking (previously CCNA certified)
- SQL & database management
- Linux and Windows servers
- Spanish: Moderate proficiency

May 20, 2021

To Director John Picarelli, Ph.D. for Funding Opportunity DHS-21-TTP-132-00-01:

As the CEO, Founder, and Connecting the Dots Officer of Awareity, I have a multi-decade history in studying and improving conditions pertinent to public safety and risk prevention. In response to Columbine Massacre and the 9/11 terrorist attack and hundreds of other tragedies, Awareity created a prevention platform and first preventers model, and they evolved to encompass extremist threats, school related violence, and workplace security. Nineteen years after the inception of the company, Awareity was awarded the 2019 SSI MVP Award. The first preventers model theorizes that funneling and combining reports of single events of suspicious behavior is enough to create a bigger picture that can save lives, futures, costs, and more. By collecting and funneling information from community members and numerous siloed agencies and organizations, community-wide teams can connect the dots to prevent incidents before they occur. The Omaha, Nebraska community champions and invests in Awareity because it eliminates silos and improves community safety and security.

In the last several years, Dr. Kearns and Dr. Elson have contributed significantly to similar research in risk and safety, suspicious activity reporting, and machine-human trust and collaboration. Since 2014, Dr. Kearns has examined racial perceptions of extremism in the United States, community policing, and police legitimacy. Dr. Elson has expertise in studying and developing trust both between human collaborators and human trust in computer systems. Dr. Elson has worked with numerous Fortune 500 companies on developing appropriate levels of trust and optimizing usability of technology platforms for both internal users and external customers.

This research team comprised of faculty at the University of Nebraska at Omaha (UNO) is leading an effort to innovate and improve upon the ways tips and incident reporting is collected, funneled and used to address threats and other challenges facing our communities. In support of this pursuit, <u>Awareity will provide access to deidentified aggregate system level reporting data from users across the country</u> in an effort to glean information related to platform engagement, challenges, and concerns. In addition, Awareity will provide UNO with access to Awareity end users for the purposes of conducting surveys and focus groups or any other data collection method they require for success. By researching these critical issues in tips reporting and developing an innovative reporting chatbot that compliments the Awareity platform, the UNO research team will aid Awareity in its efforts to engage community members and groups to increase awareness, trust, and the likelihood of reporting by community members.

Sincerely,

(b)(6)

Rick Shaw
CEO, Founder, and Connecting the Dots Officer of Awareity

OFFICE OF THE SHERIFF
SARPY COUNTY

"Honored to Serve"

May 21, 2021

To Director John Picarelli, Ph.D. for Funding Opportunity DHS-21-TTP-132-00-01:

I write to express the strong support for the application submitted by the National Counterterrorism Innovation, Technology, and Education (NCITE) Center at University of Nebraska at Omaha to the Department of Homeland Security (DHS), Center for Prevention Programs and Partnerships (CP3) / Federal Emergency Management Agency (FEMA) in exploring innovative approaches to preventing targeted violence and terrorism. This effort will inform terrorism prevention efforts, citizen participation in reporting, and law-enforcement connectedness for school safety. I currently serve as a Captain in the Sherriff's Office in Sarpy County, Nebraska and as Division Commander for Investigations, which encompasses the Warrants Unit, Narcotics Unit, Criminal Investigations Unit and the Evidence and Property Unit. Additionally, I am the High-Risk Incident Commander and have extensive experience in working as an active instructor in multiple areas of law enforcement to include tactics, field training, active shooter response and the standard response protocol.

Effective prevention of terrorism and target violence prevention relies on members of the public reporting concerning behavior, a process often hampered by lack of trust, willingness, ability and/or knowledge. Sarpy County Sherriff's Office has undertaken multiple efforts on this front including partnering with local schools to implement a tips reporting system and making this information available to key authorities and first line responders. There is tremendous need for continued research and the development of new innovative approaches in the area of reporting.

We commit our agency, the Sarpy County Sherriff's Office in Sarpy County, Nebraska, to partnering with the UNO team and supporting their efforts however possible. This includes providing the UNO team with data for analysis and access to community and law enforcement end users of the tips reporting system deployed throughout our community. In doing so, this will assist the UNO research team in aiding Sarpy County in its efforts to increase the effectiveness and utilization of tips reporting systems with the goal of reducing the likelihood of terrorism and targeted violence.

Sincerely,

Captain Kevin Griger
Investigations Commander
Sarpy County Sheriff's Office

May 17, 2021

Attention: Dr. John Picarelli, Director
The Center for Prevention Programs and Partnerships
US Department of Homeland Security
1120 Vermont Ave
Washington DC

To Director John Picarelli, Ph.D. for Funding Opportunity DHS-21-TTP-132-00-01:

I write to express the strong support for the application submitted by the National Counterterrorism Innovation, Technology, and Education (NCITE) Center at University of Nebraska at Omaha to the Department of Homeland Security (DHS), Center for Prevention Programs and Partnerships (CP3) / Federal Emergency Management Agency (FEMA) in exploring innovative approaches to preventing targeted violence and terrorism. This effort will inform terrorism prevention efforts, citizen participation in reporting, and law-enforcement connectedness for school safety.

The University of Nebraska at Omaha has strategically prioritized the study of terrorism and targeted violence as a program of excellence for our state. Upon winning the Department of Homeland Security's designation of the Center of Excellence for Terrorism Prevention and Counterterrorism research for 2020-2030, our state matched that federal award with state funding to hire five of the best researchers in the country for a tenure-track faculty cluster hire in terrorism and targeted violence.

I am pleased that two of these incoming faculty—the proposed lead investigators of this effort, Drs. Elson and Kearns, have joined a university where they have the whole state behind them in their efforts to prevent violence in our country. Awarding them with this prestigious funding opportunity will be a way to support our state's investment in violence prevention scholarship.

As the Nebraska Homeland Security Advisor, I can assure you the findings of their study will have audience across the homeland security workforce in our state.

Sincerely,

(b)(6)

Mike Foley
Homeland Security Advisor for the State of Nebraska

References

Allnock, D., & Atkinson, R. (2019). 'Snitches get stitches': School-specific barriers to victim disclosure and peer reporting of sexual harm committed by young people in school contexts. *Child Abuse & Neglect, 89*, 7–17.

Apuzzo, M., and Lichtblau, E. (2016, June 14). After F.B.I.'s Inquiry into Omar Mateen, a Focus on What Else Could Be Done. *The New York Times.* Retrieved from http://www.nytimes.com/2016/06/15/us/politics/noor-zahi-salman-omar-mateen.html

Atoyan, H., Duquet, J., & Robert, J. (2006). Trust in new decision aid systems [Paper presentation]. *Proceedings of the 18th International Conference of the Association Francophone d'Interaction Homme-Machine*, Montreal, Quebec, Canada.

Buckley, N., Frye, T., Gehlbach, S., & McCarthy, L.A. (2016). Cooperating with the state: Evidence from survey experiments on policing. *Journal of Experimental Political Science, 3*, 124-39.

Carson, J. V., & Politte, H. (2020). Implicit Bias Within Public Reporting: A Virtual Reality Experiment Examining "Suspicious" Activity. *Crime & Delinquency*.

Clarke, R. V. G., & Newman, G. R. (2006). *Outsmarting the terrorists.* Greenwood Publishing Group.

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Decker, S.H. (1981). Citizen attitudes toward the police: A review of past findings and suggestions for future policy. *Journal of Police Science and Administration, 9*, 80-7.

Dimoka, A., Banker, R. D., Benbasat, I., Davis, F. D., Dennis, A. R., Gefen, D., Gupta, A., Ischebeck, A., Kenning, P. H., Pavlou, P. A., & others. (2012). On The Use Of Neurophysiological Tools In IS Research: Developing A Research Agenda for NeuroIS. *MIS Quarterly, 36*(3), 679–702.

Elson, J. S., Derrick, D., & Ligon, G. (2018, January). Examining trust and reliance in collaborations between humans and automated agents. In *Proceedings of the 51st Hawaii International Conference on System Sciences*.

Gruenewald, J., Parkin, W., Smith, B., Chermak, S., Freilich, J., Roberts, P., & Klein. B. (2015). Validation of the Nationwide Suspicious Activity Reporting (SAR) initiative: Identifying suspicious activities from the Extremist Crime Database (ECDB) and the American Terrorism Study (ATS). Report to the U. S. Department of Homeland Security. College Park, MD: START.

Hembrooke, H. A., Granka, L. A., Gay, G. K., & Liddy, E. D. (2005). The effects of expertise and feedback on search term selection and subsequent learning. *Journal of the American Society for Information Science and Technology, 56*(8), 861-871.

Ho, A., Hancock, J., & Miner, A. S. (2018). Psychological, relational, and emotional effects of self-disclosure after conversations with a chatbot. *Journal of Communication, 68*(4), 712-733.

Jenkins, B. M., & Butterworth, B. R. (2018). Does "See Something, Say Something" Work?. *Mineta Transportation Institute Publications*.

Kearns, E. M. (2016). If you see something, do you say something?: The role of legitimacy and trust in policing minority communities in counterterrorism (Doctoral dissertation, American University).

Kearns, E.M. (2021). "See Something, Say Something?: Reporting Potential Terrorism Activities to Police." *Working paper.*

Kim, S., Lee, J., & Gweon, G. (2019, May). Comparing data from chatbot and web surveys: Effects of platform and conversational style on survey response quality. In *Proceedings of the 2019 CHI conference on human factors in computing systems* (pp. 1-12).

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McLean, K. (2019). Revisiting the role of distributive justice in Tyler's legitimacy theory. *Journal of Experimental Criminology, 16*, 335-346.

Nielsen, J., & Landauer, T. K. (1993). A mathematical model of the finding of usability problems. *Proceedings of the INTERACT '93 and CHI '93 Conference on Human Factors in Computing Systems*, 206–213.

Palasundram, K., Sharef, N. M., Nasharuddin, N., Kasmiran, K., & Azman, A. (2019). Sequence to sequence model performance for education chatbot. *International Journal of Emerging Technologies in Learning (2019), 14*(24), 56-68.

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Te Pas, M. E., Rutten, W. G., Bouwman, R. A., & Buise, M. P. (2020). User Experience of a Chatbot Questionnaire Versus a Regular Computer Questionnaire: Prospective Comparative Study. *JMIR Medical Informatics*, *8*(12), e21982.

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EMW-2021-GR-APP-00072

Application Information

Application Number: EMW-2021-GR-APP-00072
Funding Opportunity Name: Fiscal Year (FY) 2021 Targeted Violence and Terrorism Prevention (TVTP)
Funding Opportunity Number: DHS-21-TTP-132-00-01
Application Status: Pending Review

Applicant Information

Legal Name: Board of Regents, University of Nebraska dba University of Nebraska Omaha
Organization ID: 22810
Type: Public and State Controlled institutions of higher education
Division:
Department:
EIN: (b)(6)
EIN Shared With Organizations:
DUNS: 190827162
DUNS 4: 0000
Congressional District: Congressional District 02, NE

Physical Address

Address Line 1: (b)(6)
Address Line 2: [Grantee Organization > Physical Address > Address 2]
City: (b)(6)
State: (b)(6)
Province:
Zip: (b)(6)
Country: UNITED STATES

Mailing Address

Address Line 1: (b)(6)
Address Line 2: [Grantee Organization > Mailing Address > Address 2]
City: (b)(6)
State: (b)(6)
Province:
Zip: (b)(6)
Country: UNITED STATES

SF-424 Information

Project Information

Project Title: Innovation in Targeted Violence and Terrorism Prevention: Developing and Testing an Intelligent Chatbot to Help Individuals Identify Threats and Improve Tips Reporting
Program/Project Congressional Districts: Congressional District 02, NE
Proposed Start Date: Fri Oct 01 00:00:00 GMT 2021
Proposed End Date: Sat Sep 30 00:00:00 GMT 2023
Areas Affected by Project (Cities, Counties, States, etc.): Primary Location: Omaha and Sarpy County, Nebraska with regional and national components to improve generalizability and scalability

Estimated Funding

Funding Source	Estimated Funding ($)
Federal Funding	$715102
Applicant Funding	$0
State Funding	$0
Local Funding	$0
Other Funding	$0
Program Income Funding	$0
Total Funding	$715102

Is application subject to review by state under the Executive Order 12373 process? Program is not covered by E.O. 12372.
Is applicant delinquent on any federal debt? false

Contacts

Contact Name	Email	Primary Phone Number	Contact Types
Amanda Buker	(b)(6)		Authorized Official Primary Contact
Tiffani Hix			Signatory Authority Secondary Contact

SF-424A

Budget Information for Non-Construction Programs

Grant Program: Targeted Violence and Terrorism Prevention Grant Program
CFDA Number: 97.132

Budget Object Class	Amount
Personnel	$245186
Fringe Benefits	$59865
Travel	$12245
Equipment	$0
Supplies	$28000
Contractual	$33000
Construction	$0
Other	$117792
Indirect Charges	$219014
Non-Federal Resources	**Amount**
Applicant	$0
State	$0
Other	$117792
Income	**Amount**
Program Income	$0

How are you requesting to use this Program Income? [$budget.programIncomeType]

Direct Charges Explanation:
Indirect Charges explanation:

Forecasted Cash Needs (Optional)

	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
Federal	$	$	$	$
Non-Federal	$	$	$	$

Future Funding Periods (Years) (Optional)

First	Second	Third	Fourth
$	$	$	$

Remarks:

SF-424C

Budget Information for Construction Programs

Assurances for Non-Construction Programs

Form not applicable? false
Signatory Authority Name: Amanda Buker
Signed Date: Sat May 22 00:00:00 GMT 2021
Signatory Authority Title: Director of Research and Creative Activity

Certification Regarding Lobbying

Form not applicable? false
Signatory Authority Name: Amanda Buker
Signed Date: Sat May 22 00:00:00 GMT 2021
Signatory Authority Title: Director of Research and Creative Activity

Disclosure of Lobbying Activities

Form not applicable? true
Signatory Authority Name: Tiffani Hix
Signed Date:
Signatory Authority Title: